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A RUDIMENTARY DEMONSTRATION FOR THE INFORMATION SYSTEM FOR VOCATIONAL DECISIONS--ORIENTATION, GUIDANCE SCRIPTS, TEST OF OCCUPATIONAL KNOWLEDGE, AND A SCRIPT WRITING LANGUAGE.

-INFORMATION SYSTEM FOR VOCATION DECISIONS, PROJECT REPORT NO. 11.

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A COMPUTERIZED INFORMATION SYSTEM FOR VOCATIONAL DECISIONS IS DESCRIBED AND DEMONSTRATED. DEMONSTRATION MATERIALS INCLUDE AN INTRODUCTION TO THE SYSTEM, SIX SCRIPTS, A TEST OF OCCUPATIONAL KNOWLEDGE, AND A SCRIPT WRITING LANGUAGE. THE INQUIRER'S NAME IS FIRST REQUESTED BY THE SYSTEM. THE INQUIRER DECIDES WHETHER HE WISHES TO CHOOSE A SPECIFIC SCRIPT, TAKE THE TEST OF OCCUPATIONAL KNOWLEDGE, OR WRITE A SCRIPT HIMSELF. THE SCRIPT, "NAMING AND COLLECTING JOB PREFERENCES," ELICITS APPROPRIATE DATA, COLLECTS JOB PREFERENCES, AND CALLS UP OTHER SCRIPTS. "EXPLORATION" COLLECTS DATA AND DIRECTS USERS TO OTHER SCRIPTS. "LEARNING THE ROE CATEGORIES" IS FOR THOSE WHO HAVE NOT THOUGHT ABOUT FUTURE OCCUPATION, AND "CHOOSING FURTHER EDUCATION" PRESENTS EDUCATIONAL OPPORTUNITIES. "CHOOSING A JOB BY CHARACTERISTICS" ELICITS PREFERENCES AND DISLIKES ABOUT JOB CHARACTERISTICS USING A BASE OF 11 OCCUPATIONS. "GETTING SPECIFIC JOB DESCRIPTIONS" USES THE INFORMATION COLLECTED TO PROVIDE SPECIFIC INFORMATION. THE SIX PART OCCUPATIONAL KNOWLEDGE TEST DEALS WITH PARTICULAR JOB CLASSIFICATIONS AND THE INQUIRER'S OCCUPATIONAL CHOICE. THE MINORCA SCRIPT-WRITING LANGUAGE IS DISCUSSED AND EXPLAINED. SCRIPT COPIES ARE APPENDED. (SK)

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INFORMATION SYSTEM FOR VOCATIONAL DECISIONS

Project Report No. 11

A RUDIMENTARY DEMONSTRATION FOR THE INFORMATION SYSTEM FOR VOCATIONAL DECISIONS: ORIENTATION, GUIDANCE SCRIPTS, TEST OF OCCUPATIONAL KNOWLEDGE, AND A SCRIPT WRITING LANGUAGE

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Graduate School of Education
Harvard University

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Preface

By July 1969, the Information System for Vocational Decisions intends to provide the second version of an operating prototype of a computer-based system for vocational decisions. Three stages are planned prior to delivery of this second version of the prototype.

The first, or exploratory, stage of the computerization of the System took place from 1 June 1966 to 1 June 1967. The exploratory stage primarily led 1) to investigation of various hardware and computer languages (See Ellis, Technical Memorandum 1), and 2) to the selection of hardware and language. In the course of these explorations, several approximations to the materials of the second version of the prototype were devised and implemented in a time-shared computer mode. These materials which are intended only for demonstration and test by the staff of the ISVD are described in this project report which is merely a working paper. The materials described herein are by no means the first of our needed prototypes. The materials were devised to approximate some of the needed operating computer characteristics, not to approximate the needed decision-making and vocational development curricula. However, the materials do indicate directions which the computerization of the ISVD prototype are taking. The materials are therefore shared herein in order to indicate to interested observers and fellow experimenters trends in what the Information System for Vocational Decisions is adding to the potential of computer interactions in education.

The second stage in the development of the ISVD prototype will occur during the next twelve months of the project. This second stage will lead to provision of basic conceptual material needed for the cultivation of decision-making behavior and attitudes in relation to educational and vocational choice. These rudimentary materials, when assembled and made operative in a time-shared computational mode, will be designated Prototype I.

The third stage which is to be completed during the final twelve-month period of the project, will involve 1) insertion of decision-making monitoring routines into the basic materials on vocational development, and 2) field test of the subsequent System. These edited and expanded materials, when operating, will be designated as Prototype II. The ISVD project has obligated itself to deliver: 1) Prototype II; 2) indications of the operating characteristics of Prototype II; and 3) suggestions for revision of Prototype II in order to make both a complete, and an improved, operating system.

David V. Tiedeman

Cambridge, Mass.
1 August 1967

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Demonstration Elements with Descriptions

Overview

This paper describes a set of materials that has been computerized to demonstrate some of the capabilities of an information system for vocational decisions. This "demonstration package," however, is not a prototype or a mock-up, or a model, or even the specific basis on which the prototype will be built. It is nothing more than a set of materials, relevant to career choice, put together in order to provide a feeling for the problems we are trying to solve.

The demonstration was provided in order to give staff members and visitors a sense for the phenomenon of sitting at a console that is connected to a computer and "interacting" with computer programs and data. The demonstration also provides pilot experience for those in the project who are constructing data files for interactive use by inquirers. Both of these goals have provided staff in the computer area with challenge to meet the emerging computer needs in the Information System for Vocational Decisions.

The demonstration materials are of four kinds: an introduction to the system, a collection of sequenced guidance programs called "scripts," a test of occupational knowledge, and a script writing language. These four components are linked together at appropriate points, although they may be examined individually if desired.

Elements and Descriptions

I. Introduction to the System

The demonstration begins with a request for the inquirer's name. The system then determines if this is his first time through the materials. If it is, the inquirer receives a brief explanation of the system. If it is not the first time through, he is given an option to receive a summary of his previous interaction.

Once the inquirer has completed this preliminary phase of the demonstration, he is given a choice of activities in which to engage. He may choose to see a specific script, to take the Test of Occupational Knowledge, or to write a script himself. The specific alternatives are spelled out to him by the system and are as follows:

1. Introduction to the system
2. Naming and collecting job preferences (Aylmer script)
3. Exploration (Kronstadt script)
4. Learning the Roe categories (Kronstadt script)
5. Choosing further education (Lerer script)
6. Choosing a job by characteristics (Durstine script)
7. Getting specific job descriptions (Wolff script)
8. Take a test of occupational knowledge
9. Write a script in MINORCA
10. Summary of your interaction with the machine

II. Scripts

There are six scripts in the demonstration, each linking to one or more of the others:

A. Naming and Collecting Job Preferences (Aylmer)

This is the beginning or first script and is used primarily as an "executive routine." That is, its function is to elicit appropriate data, to collect job preferences, and to call up other relevant scripts. A quote from Aylmer's comments (December 30, 1966) is appropriate here:

> "This script is primarily intended as a demonstration of just one way in which we might approach the problems of assessment and supervision. As such, it is embarrassingly open to criticism of its admitted oversimplification of the Tiedeman and O'Hara paradigm . . . Still, it raised for me some interesting questions about the nature of career development and supervision, and the kinds of technology (language specifications, internal tests, data bank list formats, etc.) which might be needed."

B. Exploration (Mrs. Kronstadt script)

This short script, like the Aylmer script, is an executive routine whose main function is to collect information about the inquirer and to direct him to other scripts. This script, as Mrs. Kronstadt says,

is incomplete.

> "Although eventually there will be a 'superscript' for exploration written, . . . /this script/ is a small beginning . . . the Explore routine itself is not carried through . . ." (January 10, 1967)

C. Learning the Roe Categories (Mrs. Kronstadt script)

This script teaches the inquirer the occupational classification scheme developed by Professor Emerita Anne Roe of Harvard University. In an inquirer has not thought about his future occupation or if he is not familiar with important characteristics of his chosen occupation, then this script is appropriate.

D. Choosing Further Education (Lerer script)

This is a beginning script on educational opportunities and may be accessed from the Aylmer script. It demonstrates the kinds of education information that the project hopes to deal with in the future.

E. Choosing a Job by Characteristics (Durstine script)

This script elicits from the inquirer a list of preferences and a list of dislikes concerning job characteristics. Based on a small data base of eleven occupations,

> "It extracts for him a personal list of jobs about which he might seek further information. This script was designed to:

1. utilize only such data as currently exists in the base;

2. give the student considerable freedom in manipulating the data to select suitable jobs;

3. avoid both dull repetition and confusing innovation in the script while rendering it applicable to repeated interviews with the student; and,

4. in the student's list, to be inclusive rather than exclusive of jobs for which programmed data are unavailable.

"In order to fulfill these objectives, an interview pattern was established, consisting of a sequence of choices through which to select a list of jobs for further inquiry. While this may seem restrictive, it actually is minimally so. The student cannot, unfortunately, ask questions or set alternatives for which we have no data, or for which we have no code for access to the data. Though the interview follows a fixed pattern, the familiarity gained by unlimited opportunities for repetition will lead to an understanding of how best to use the alternatives that are provided. It is possible, even, that the student might gain a

better understanding of himself through repetition of the selection of categories. Whenever the job lists that his choices induce do not seem appropriate to him, he can make his choices differently next time in seeking more suitable lists.

"To avoid dull repetition of the interview sections, a system of rotating variations has been used. Some sections (part of dialogue which exists independently or in sequence with other parts but is never further subdivided) have a series of variable wordings to be used cyclically. There are also unique section wordings for some special cases, such as the initial interview. In other sections variations of wording are unessential.

"The style of prose used in the scripts will undoubtedly be questioned on the basis of understandability to average high school pupils. In this we willingly bow to revision. The pattern and content of the scripts, however, should give good access to the data base as it stands."

(Durstine and Fitzhugh, April 12, 1967)

The eleven occupations are:

1. Pharmacist
2. Lawyer
3. Art teacher

4. Real Estate Agent
5. Accountant
6. Enlisted man
7. Fisherman
8. Musician
9. Baker
10. Barber
11. Skilled machinist

These occupations are the basis for this script and the Wolff script.

F. Getting Specific Job Descriptions (Wolff script)

This script uses the information stored about the eleven occupations in the demonstration data base. It actually does not call for interaction between inquirer and machine; the inquirer merely types in the number of the occupation that he wants information about and the computer types out the description.

> "The descriptions are not final products but examples of what is possible with the information now available. For use with students, the ISVD will have to simplify them and prepare alternative description forms for different situations." (Wolff, April 3, 1967)

III. The Test of Occupational Knowledge (William McSherry and Robert O'Hara)

This test demonstrates the potentials of computer administered and scored tests. The inquirer is given a choice

of taking one of six parts of the test or taking all of the 150 questions. The first five parts each contain 20 questions concerning a particular classification of jobs (i.e. professional, managerial, clerical, etc.). The last fifty questions relate specifically to the inquirer's occupational choice. There are 100 occupations keyed so that if chosen they can be scored.

In answering the questions on this test the inquirer must

1. Type a single number (1, 2, 3, 4, 5, or zero)
2. Check that he has typed the number that he believes to be correct. If not, he can repeat step 1 until he is satisfied.
3. Press carriage return.

The inquirer may type a zero as an answer to any question for which he prefers either not to make a choice or that he wants to come back to later in the test. A question number is printed to the left of each question.

The inquirer can elect to take one or more of the six sections of the test in any order that he wants. He can choose:

1. Professional, Technical, and Managerial Work
2. Clerical and Sales Work
3. Service Work
4. Agriculture, Marine and Forestry
5. Mechanical and Manual Work
6. Specific Occupational Information

Otherwise, he may choose:

7. to take all sections without a break

or

8. to have all completed sections scored

or

9. to exit from the test.

In answering the last fifty questions, it might be wise to select one of the 100 keyed occupations so that they can be scored. The list of jobs available follows:

Accountant
Bilingual Accountant
Accountant C.P.A. for Government
Actor
Actuary
Architect
Baker
Banker
Barber
Baseball Scout
Biologist-Botanist
Bookkeeper
Cabinetmaker
Carpenter
Chef
Coach
Commercial Artist
Confectionist
Contractor
Dairy Farmer
Engineer
Enlisted Man-Military Services
Enlisted Man-Army Draftsman
Factory Worker
Foreman
Forest Ranger
Food Distributor
Funeral Director
F.B.I. Agent
Fireman
Fisherman
Florist
Game Warden
Health Inspector

Hospital Administrator

IBM Operator

Journalist

Laborer (Construction)

Language Translator

Lawyer

Machinist (skilled)

Machine Operator (semi-skilled)

Managerial Work (Hardware Merchant)

Managerial Work (Industrial)

Mechanic

Mechanic (airline)

Musician

Musicologist

Office Work

Officer (U.S. Navy)

Officer (Pilot U.S. Air Force)

Officer (Navigator U.S. Air Force)

Officer (Military Service)

Optometrist

Patternmaker

Pharmacist

Photographer

Photographer (Underwater)

Physical Therapist

Pilot (Commercial)

Plumber

Policeman

Printer (Offset)

Professional Athlete

Radio Broadcaster

Railroad Engineer

Real Estate Agent

Religious (Brother)

Religious (Medical Missionary)

Religious (Priest)

Religious (Teaching Priest)

Repairman

Salesman

Salesman (Insurance)

Sales Manager

Sales (Store Clerk)

Scientist (Chemist)

Social Work

Skilled Tradesman

Stock Broker

Store Manager

Teacher

Teacher (Phys. Ed.)

Teacher (Art)

Teacher (Home Economics)

Teacher (Mathematics)

Teacher (Shop)

Teacher (Science)

Technician (Electronics)	U.S. Government Worker (Admin.)
Technician & Radio Technician	Veterinarian
Tinsmith	Welder
Truck Driver	Writer

After completing any part of the test, the inquirer can 1) go on to another part of the test, 2) get a score on the part he took or 3) stop taking the test and go on to something else. Taking the entire test requires anywhere between two and three hours.

A flow chart of this aspect of the demonstration system is indicated in Exhibit 1.

IV. MINORCA (sometimes spelled MYNORCA)

MINORCA, a script-writing language has been implemented on the MIT computer. The implementation does not always follow the April 4, 1967 memo on MINORCA. It is not advised that you try to write a script in MINORCA at the console unless you are thoroughly sure of the rules of the language. A brief statement of the implemented language follows:

The script name must be the first input by the author; it consists of one line terminated by a carriage return (henceforward abbreviated by cr). It is recommended that no punctuation or function be used in the script name and that it be as short as possible. At present no check is made to see if your new script names matches any that have been previously constructed. Care is

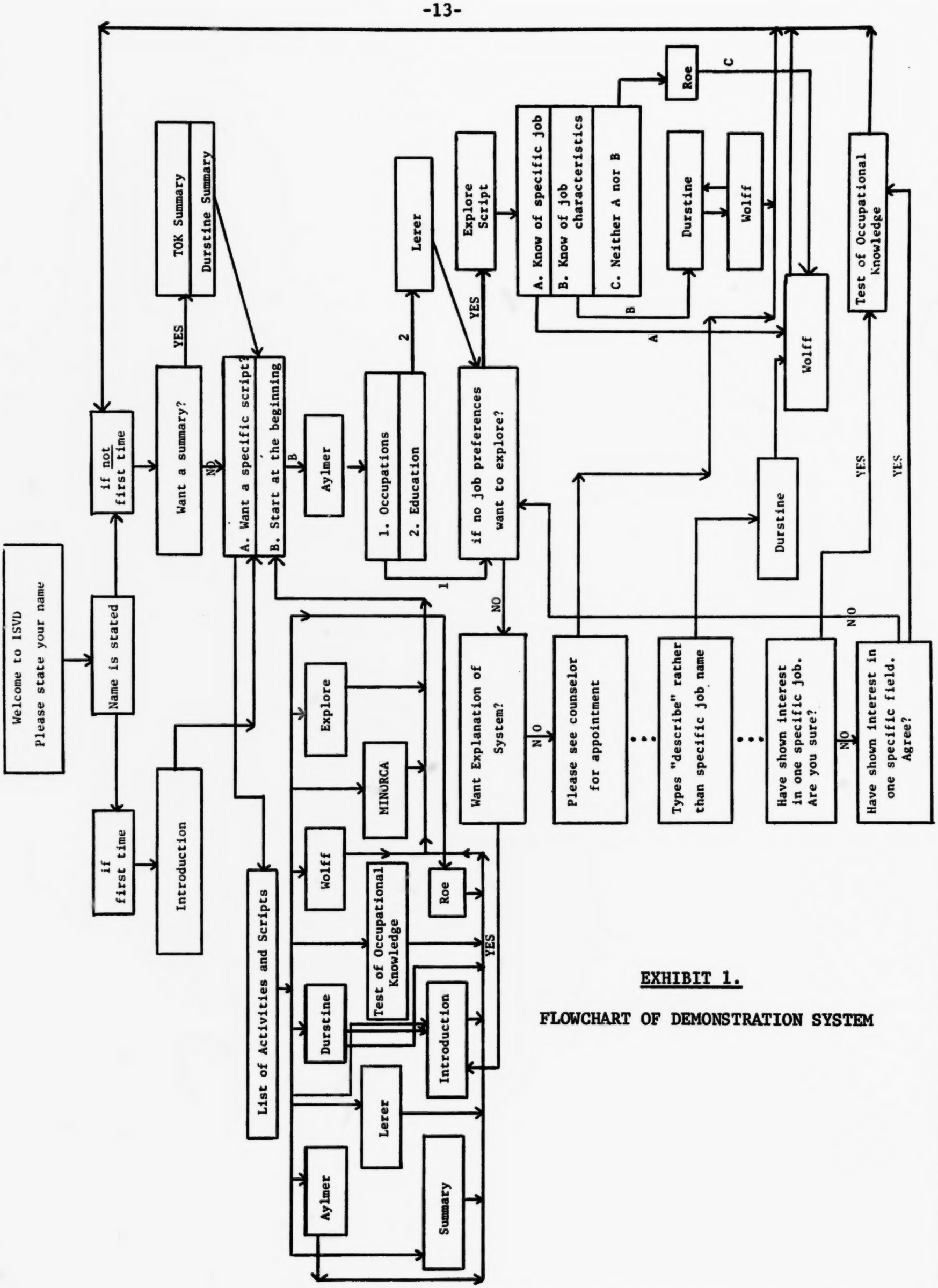


EXHIBIT 1.

FLOWCHART OF DEMONSTRATION SYSTEM

urged in not duplicating script names.

After the script name has been input, the author may continue to input the first frame. Frame numbers are always identified by a preceding asterisk, followed by a blank and then a decimal number consisting of one to three digits before the decimal point and two after. The following are examples of frame numbers:

Correct	Incorrect	
* 7.00	*700.00	NO BLANK SPACE
* 0.07	* .01	NO DIGIT BEFORE DECIMAL POINT
* 987.03	*8490.07	TOO MANY DIGITS

Frames may be input by the author in any order; they will always be output to the student in increasing numerical order from 0.00 to 999.99 unless the author otherwise specifies through the use of the action statement. Following the frame number, a frame name may occur after leaving a blank space. This name is terminated by a cr and may consist of more than one word. If a name is not desired for the frame it may be omitted. However, the preceding blank space must occur. The asterisk indicating a new frame must occur in the first column. A frame definition must be the first thing input by the author after the script name.

One or more step definitions may follow the frame number and name. A step is defined by giving it a step number which begins in the first column and is of the same form as the frame number (without the asterisk). Steps may be input in any order, but will be given to the student in numerical order within the frame. The next word in a step definition is the mode of operation and is enclosed in parentheses. The following modes are currently available:

(CRT) - output to student on cathode ray tube.

(AUDIO) - output to student on audio device.

(SLIDE) - the author may input the description of the slide.

(KEYBOARD) - the program accepts one line of input from the student.

(ACTION) - the basic branching instruction.

The (CRT), (AUDIO), and (SLIDE) modes are followed with a blank space and then the material may be input. Functions may be included directly in the text. The (keyboard) mode is followed by nothing and only one can be used per frame. The following are examples of step definitions:

```
3.00  (CRT)  This is a test of Minorca  s

7.77  (Keyboard)

2.90  (Slide) Girl dancing Mambo
```

Column 1 of each line is reserved and text that continues from the step definition above it must start in column 2.

The (ACTION) mode has the following format: a step definition followed by a cr.

```
3.00 (ACTION)  cr
```

Then beginning on the next line, starting in column 2, the following arguments occur in order separated by a slash and continuing as many lines as is necessary: a test argument, a comments argument, and a branch argument. Functions may be used in any of these arguments but special care may be necessary if they are used in the branch argument.

The test argument can consist of either of two forms, the answer form or the if form. The answer form always must be preceded by a (keyboard) mode in the same frame. The student answer from the (keyboard) step is compared with the statement in the test argument and if they are

identical, the comments argument is printed out to the student and the next step given is that specified by the branch argument. If they are not identical, the next test argument is analyzed. The test argument can also be of the if form. This need not be preceded by a (keyboard) mode. The if form is of the following type. It begins with the command .IF. and has several arguments which may be literals or functions. The following connective operators are available: AND., logical and, and .OR. logical (inclusive) or: the following connective operators are available: .E., equals or is, and .NE., not equals or is not.

Any of the arguments of the (action) mode may be omitted with the following meaning: if the test argument is omitted, this becomes the default escape when none of the previous statements have matched the student answer. For this reason, the default statement should be the last set of arguments in the (action) mode. The comments argument will always be printed and the branch taken unless one of the preceding answer form matches or .IF. statement is true. Omission of the comments field, implies no comment is to be given and omission of the branch field, implies that the author wishes to branch back to the first step in the current frame. If no default statement is given, then one is automatically provided to branch back to the first step of the current frame, with the comment: Try again.

The if form is analyzed according to whether it is logically true or false given the values of its arguments. Complex forms may be used. For example:

(a) .IF. DOG .E. #(member, animals)

(b) .IF. DOG .E. #(member, animals) .OR. CAT .E. #(member, animals)

Given that there is a function #(member, animals), the examples are

TRUE if in case (a) dog is a member of the list Animals or in case (b) either dog or cat is on the list Animals.

Functions are of the form #(name, argument 1, argument 2, . . .) and may be constructed by the author. Several functions will be constructed as an integral part of the language and will be described in another memo as will the method of constructing your own functions. Functions can be thought of as having a value, not when the author is writing his script but when the student is executing the author's program. At this time functions are replaced by their values (for example in (a) above #(number, animals) would be replaced by DOG. Caution should be used if functions are to be used in script names, frame names or numbers and step numbers and modes.

Error messages sometimes occur to begin again, start on a new line and retype the step or frame that caused the error. If you have gone several steps beyond the erroneous step start the frame over. Errors that do not cause error messages but are noticed by the author may be corrected as follows: An immediately previous character on the same line may be wiped out with a ", using multiple "'s to wipe out further back. Naming a step identically with a previous step (including frame number) causes the earlier frame to be wiped out. Whole frames must be wiped out step by step.

REFERENCE

Ellis, Allan B. and Wetherell, Charles S., The Computer and Career Decisions. Information System for Vocational Decisions Technical Memorandum I. Cambridge, Massachusetts: Harvard University, September, 1966.

APPENDIXES: THE SCRIPTS

Naming and Collecting Job Preferences - Robert Aylmer

Occupational Data Base: EXPLORE - Diana Kronstadt

Roe's Group Script - Diana Kronstadt

Exploration of 4-Year Colleges - Lawrence Lerer

Choosing a Job by Characteristics - Richard Durstine and Lynne Fitzhugh

A Procedure for Writing Job Description by Computer - Laurence Wolff

Naming and Collecting Job Preferences

by Robert Aylmer

*1.00 Data Base Choice

Note: In the future, this would be seen on the CRT and heard on the audio device.

1.00 (CRT, Audio) In the future we will have four sets of information.
(1) Information about occupations
(2) Information about further education
(3) Information about military service
(4) Information about marriage and family life.
Presently we only have information about occupations although you can see a beginning script on education. Please type in your choice:

1. occupations
2. education

2.00 (keyboard)

Note: If the inquirer types in #2, he will be branched to Lerer's script on Education. At the end of Lerer's script, he is branched to frame *2.00 of this script.

3.00 (action) 1/Okay, Let's begin/*2.00/
2/Okay, Let's begin/.do. Lerer/
/Please type 1 or 2/2.00/

*2.00 Preference Exist

1.00 (CRT, Audio) Remember, in this demonstration, we have data on the following jobs: Pharmacist, Lawyer, Art Teacher, Real Estate Agent, Accountant, Enlisted Man, Fisherman, Musician, Baker, Barber, and Skilled Machinist.

2.00 (audio) Do you have any idea at present of the occupation you will eventually enter? Type in yes or no.

3.00 (keyboard)

4.00 (action) yes/good, you're already thinking about your future/*3.00/

no//*2.50/

//*2.50/

*2.50 Want to Explore

1.00 (audio) Perhaps you'd like to explore some of the jobs which might be possibilities for you? Type in yes or no.

2.00 (keyboard)

3.00 (action) yes/Okay, let's take a look at some jobs/.do. Explore/

no/ /*2.55/

#(prod 1)2.00/

Note: A list of prods will be available to the script writer. In this case, prod 1 means that the message "Please type yes or no" would be given to the inquirer.

*2.55 Want More Information?

1.00 (audio) Would you like to know more about this system in order to decide where to begin?

2.00 (keyboard)

3.00 (action) yes/Okay/.do. Introduction/

no/Please call counselor for appointment/ .do. 2nd interview/

/#(prod 1)/2.00/

*3.00 Can Name Preference

Note: "Describe script" and "name list" routines will: (a) ascertain whether S has mentioned a specific job or a field, and (b) identify field of S choice//branch to *4.00.

1.00 (audio) Please type the name of the job or jobs you prefer now. Type a * after each one. #((System will do accounting on number of choices)) If you know what type of work you want to do, but can't think of a specific name for it, type the word "describe."

2.00 (keyboard)

3.00 (action) Describe//.do. describe with return to *3.10/

//*3.20/

```
                    *3.10
Note: One way of    1.00  #((Is this the first time the student has expressed a
specifying internal                preference)
tests.
                    2.00  T//*4.00/
                          F//*4.40/

                    *3.20

                    1.00  #((Is this the first time the student has expressed a
                                preference)

                    2.00  (action)      T//*3.50/
                                        F//*4.40/

                    *3.50 Alternatives?

Note: To be done in 1.00  (audio)       The following jobs match the description
the future.                             you've given.

                    2.00  (CRT)         "unanalyzed"

                    3.00  (audio)       Are you considering any jobs or job types
                                        besides these?

                    4.00  (keyboard)

                    5.00  (action, CRT) yes//*3.00/
                                        no/Okay/*4.40/
                                        /#(prod 1)/*3.50, 4.00/

                    *4.00 Alternatives

                    1.00  (CRT)         #(Output from total preference list)

                    2.00  (audio)       Are you considering any jobs or job types
                                        besides these?

                    3.00  (keyboard)

                    4.00  (action, CRT) yes//*3.00/
                                        no/Okay/*4.10/
                                        /#(prod 1)/ 3.00/

                    *4.10

                    1.00  (Number of choices > 1?))

                    2.00  (action)      T//*4.45/
                                        F//*4.20/
```

*4.20

1.00 #((Is choice a job (not a field)?)) Call it a job for now.

2.00 (action) T//*4.50/

F//*4.60/

*4.40 Review/Alternatives

1.00 (audio) Let's review for a moment. So far you have shown a preference for the following jobs or fields.

Note: On the CRT, the inquirers' answers from FRAMES 3.00, 3.50, and 4.00 would be shown.

2.00 (CRT) #(Jobs or fields named or described *3.00, *3.50, *4.00)

3.00 (audio) Are there any others?

4.00 (keyboard)

5.00 (action) yes/ /*3.00/

no/Okay/*4.45/

/#(prod 1)/4.00/

*4.45

1.00 #((All preferences in same field?)) All preferences in field of --work-- for this demonstration

#(save fields)

2.00 (action) T//*4.60/

F//*4.70/

*4.50 Sure of Job?

1.00 (CRT) Then you're fairly sure that #(job name from *3.00) is the job for you?

2.00 (keyboard)

3.00 (action) yes/Let's see if you're ready to make a choice/.do. TOK with return to *1.00, 1.00/

no//*4.60/

/#(prod 1)/2.00/

*4.60 Sure of Field?

1.00	(audio)	So, even though you haven't decided on a specific job, you appear to be primarily interested in one field.
1.00	(CRT)	Your choices #(output from *4.40) appear to be all in the field of #(field)? Don't you agree?
2.00	(keyboard)	
3.00	(action)	yes/Let's see if you're ready to make a choice/.do. TOK with return to Aylmer, *1.00, 1.00/
		no//*2.50/
		/#(prod 1)/2.00

SCRIPT - Occupational Data Base - EXPLORE

by Diana Kronstadt

*1.00 Exploration Begins

1.00 (CRT, audio) You are now in the exploration area of our system. The purpose of this particular area is to allow you to explore jobs or occupations which seem interesting to you. Also there might be some jobs which you would like to learn more about and you may do this here. We are not going to try to commit you to any choices here but rather to let you browse through any information that we have. At this time which of the following do you think most nearly applies to you?

2.00 (CRT, audio) A. You have thought about certain jobs you may wish to enter in the future.

B. You don't know exactly what jobs you might be interested in but you do know some job characteristics which you consider important for your future job.

C. Neither A. nor B.

3.00 (audio) Type in A, B, or C.

4.00 (keyboard)

5.00 (action) A/Good, it's never too soon to begin planning for the future./.do. Wolff with introduction/

B/Fine, knowing the job characteristics which are important to you is a good starting place for us./.do. Durstine/

C/There will be plenty of opportunities for you in this exploration area of the system to look at the world of work./*1.50/

/Let's try this again/3.00/

Note: Depending on response, the inquirer can go to either Wolff or Durstine or continue with Exploration.

*1.50	No Specifics	
1.00	(CRT, audio)	Since you don't have any specific things in mind yet, it might be helpful if you looked at the world of work by seeing a classification system we have. This method of putting jobs in categories is based on the major activities involved in the job. This simply means that jobs are organized by what the people who work at them actually do most of the time.
2.00	(CRT)	Chart (showing how many years of life are spent at job activities as opposed to other activities).
2.00	(audio)	As this chart shows, a good bit of your life in the future will be spent at work activities.
3.00	(CRT)	It seems then, that a good place for you to begin looking at occupations is by the major activities involved in them.
4.00	.do. Roe	

Note: No response from the inquirer is required here to go on to Roe.

Roe's Group Script
by Diana Kronstadt

*1.00 Service

1.00 (CRT, audio) The first group of jobs we refer to as "service." This group includes those occupations which deal with attending to other people, their tastes, needs or welfare.

Note: Notice how several media are used at one time.

2.00 (slide) Counselor

2.00 (audio) Counselors and social workers are part of the service group; a major part of their job is attending people's needs.

3.00 (slide) Chef

3.00 (audio) Chefs and waiters are also in service occupations. They are concerned with serving people's tastes.

4.00 (CRT, audio) So we can see then that the service occupations are those that serve other people in any number of ways. The focus of their activities is people.

5.00 (CRT, audio) Which of the following occupations do you think fits into the service category? Please type in the right answer.

6.00 (slide)
A. Artist
B. Barber
C. Farmer

7.00 (keyboard)

8.00 (action) (CRT, audio)
A/although artists deal with people indirectly, they are not a service occupation. Try again/6.00/

B/very good. A barber works at satisfying people's needs and is in a service occupation/*2.00/

C/a farmer's work will eventually serve other people but he is not actively and primarily dealing with people on his job. Try it again/6.00/

Note: The author can indicate how and when to monitor inquirer responses.

(This applies to wrong answers in each frame: count here. If A or C is selected twice then - (CRT) "Don't play games, you know that's wrong.")

*2.00 Business Contact

1.00 (CRT, audio) The next occupational area is called "business contact." The jobs in this area are concerned with face-to-face selling. Personal persuasion is a major part of business contact occupations.

2.00 (slide) Peddler

2.00 (audio) Peddlers and other sales people fall into the business contact area.

3.00 (slide) Promoter

3.00 (audio) Promoters and public relations counselors also are in a business contact area although they aren't selling as directly as the peddler. They are using personal persuasion.

4.00 (CRT, audio) Which of the following occupations do you think fits into the business contact area? Type in your answer.

5.00 (slide) A. Real estate salesman

B. Policeman

C. Cashier

6.00 (keyboard)

7.00 (action) (CRT, audio) A/Right. A real estate salesman's job involves personal persuasion and face-to-face selling so he is definitely in a business contact occupation/*3.00/

B/No, policemen are actually in a service occupation. Their concern is for the welfare of others. Give it another try/4.00/

C/Good try, but no, a cashier really isn't selling anything although a cashier's work is at a personal level. Try again/4.00/

/Please try again/4.00/

*3.00 Organization

1.00 (CRT, audio) The organization group of occupations consists of managerial and coordination type jobs. People working in these occupations are concerned with the efficient running of businesses, industries or government agencies.

2.00 (slide) President

2.00 (CRT, audio) The President of the United States probably has the largest organization job of all.

3.00 (slide) Messenger boy

3.00 (CRT, audio) On the other hand, a messenger boy is also involved in a job of organization. His job contributes to the efficient functioning of the company that employs him.

4.00 (CRT, audio) Which of the following occupations do you think belongs in the organization group? Type A, B, or C.

4.00 (slide) A. Accountant

B. Lumberjack

C. Reporter

5.00 (keyboard)

6.00 (action) (CRT, audio) A/Fine, an accountant has an important role in the functioning of his organization./*4.00/

B/No. A lumberjack is not really part of a larger organization structure and really belongs in another occupation group, which we'll get to later. Try it again/4.00/

C/Although a reporter does work for an organization, in this case a newspaper, he is not directly concerned with coordination or management function. Let's try again/4.00/

/Go back and try again please/4.00/

*4.00 Technology

1.00 (CRT, audio) We're going to talk about the technology group now. This group of occupations includes those concerned with producing, maintaining or transporting the things that are important to people in their daily lives. This includes things like clothing, food, books but also utilities such as gas, water, and electricity.

2.00 (slide) Ship's captain

2.00 (CRT, audio) The captain of a ship is working in the technology area. His job involves transportation of goods.

3.00 (slide) Electrician

3.00 (CRT, audio) An electrician is concerned with maintaining and repairing equipment which is very important in our lives.

4.00 (CRT, audio) Choose the occupation which best fits into the technology area from the following. Type A, B, or C.

5.00 (slide) A. Fireman
B. Veterinarian
C. Factory Worker

6.00 (keyboard)

7.00 (action) (CRT, audio) A/No, a fireman belongs in the service group. His job primarily involves the welfare of others. Try again/4.00/

B/A veterinarian doesn't belong in the technology group. He is not concerned with producing, maintaining or transporting goods or services. Give it another try/4.00/

C/Good. Yes, a factory worker works in the technology group of occupations. His job involves producing goods and materials for people./*5.00/

/Try again please/4.00/

*5.00 Outdoor

1.00 (CRT, audio) The outdoor group of occupations is mainly involved with growing, preserving or gathering natural resources. These may be from land, earth or sea. Also included here are those occupations which deal with animal husbandry; as the name of this group suggests, the focus of activity occurs in the outdoors.

2.00 (slide) Coal miner

2.00 (CRT, audio) A coal miner is in an outdoor occupation. A coal miner works at gathering a natural resource of the earth, coal.

3.00 (slide) Farmer

3.00 (CRT, audio) A farmer is concerned with cultivating and gathering crops and naturally falls into the category of outdoor occupations.

4.00 (CRT, audio) Which of the following do you think belongs in the outdoor occupational category? Type A, B, or C.

4.00 (slide) A. Messenger boy

B. Aviator

C. Game Warden

5.00 (keyboard)

6.00 (action) (CRT, audio) A/No, a messenger boy is not even close to working in an outdoor occupation. He is in an organizational job. Try it again/4.00/

B/Well, an aviator does spend lots of time in the outdoors, but he's not concerned with growing, gathering or preserving natural resources. Give it another chance/4.00/

C/Good, a game warden's job is to preserve wild life which is certainly a natural resource./*6.00/

/Try again/4.00/

*6.00 Science

1.00 (CRT, audio) The next group of occupations is referred to as the science category. These occupations are primarily concerned with scientific theory and its specific application.

2.00 (slide) Doctor

2.00 (CRT, audio) A doctor's job may be thought of as being in the science group. Although a doctor is very involved with helping people, he does not belong in the service group. A doctor has a body of knowledge or scientific theory which we call "medicine." This places doctors in the science group.

3.00 (slide) Meteorologist

3.00 (CRT, audio) A weather man, or meteorologist applies scientific theory of meteorology to the prediction of weather conditions. He works in a science area.

4.00 (CRT, audio) Of the follow[illegible] occupations which belongs in the science group? Please type A, B, or C.

4.00 (slide)
A. Elevator Operator
B. Physicist (research lab)
C. Draftsman

5.00 (keyboard)

6.00 (action) (CRT, audio)
A/No, an elevator operator is actually pretty far removed from the science occupations. His job mainly involves serving the needs of others. . . that is a service occupation. Try it again/4.00/

B/Very good. Physicists have much scientific theorizing involved in their jobs . . . Let's go on/*7.00/

C/Good try, but a draftsman works in the technology field. His occupation involves drawing the blueprints for maintenance or production of goods and services. Have another go at it/4.00/

/Please try again/4.00/

*7.00 General Culture

1.00 (CRT, audio) The occupations that are called general culture are concerned with preserving and handing down the general cultural heritage.

2.00 (slide) Teacher

2.00 (CRT, audio) Teachers are employed in the general culture group. Their concern is transmitting our culture to their students.

3.00 (slide) Judge

3.00 (CRT, audio) A judge is also carrying out his job in this general culture category. A judge's duties involve both preserving and transmitting our culture.

4.00 (CRT, audio) Which of the following occupations do you think belongs in the general culture group? Type in A, B, or C.

4.00 (slide)

A. Typist

B. Reporter

C. Fireman

5.00 (keyboard)

6.00 (action) (CRT)

A/No, a typist is part of the organization group. She functions in a commercial enterprise as part of its organizational structure. Try again/4.00/

B/Right, reporters collect news and their news stories are part of our culture. Their job is actually passing on the general culture. Very good/*8.00/

C/That is not it, firemen are in a service occupation. They attend to people's welfare. Try it again/4.00/

/Let's try again/4.00/

*8.00 Arts and Entertainment

1.00 (CRT, audio) The arts and entertainment category includes those occupations concerned with the use of special skills in the entertainment field, or in the creative arts.

2.00 (slide) Juggler

2.00 (CRT, audio) A juggler utilizes his special talents and skills to entertain others.

3.00 (slide) Artist

3.00 (CRT, audio) Naturally we consider artists part of this category. They use their talents in a highly creative fashion.

4.00 (CRT, audio) Which of the following belongs in the arts and entertainment field? Please indicate the right answer by typing in A, B, or C.

4.00 (slide)

A. Stagehand

B. Salesman

C. Forest Ranger

5.00 (keyboard)

6.00 (action) (CRT, audio) A/Good. Stage hands use their skills in the entertainment field/*9.00/

B/No. . . a salesman does perform in one sense of the word. But actually he is engaged in the personal selling of goods, which would place him in the business contact group. Try it again/4.00/

C/No, forest rangers don't fit into the arts and entertainment category. They work in an outdoor occupation and the focus of activity for a forest ranger is preserving our natural resources. Try it again/4.00/

/Please try again/4.00/

*9.00 Need Review

1.00 (CRT, audio) Okay, those are the eight major occupational groups.

2.00 (audio) Do you think you understand these well enough to go on? Please type yes or no.

3.00 (keyboard)

4.00 (action) yes/Okay, let's continue/.do. Wolff/
(CRT, audio) no//*9.50/
/Try again please/2.00/

*9.50 Review

1.00 (CRT, audio) We can review the descriptions of the occupational groups.

2.00 (CRTO Here are the groups we've discussed.

A. Service
B. Business Contact
C. Organization
D. Technology
E. Outdoor
F. Science
G. General Culture
H. Arts and Entertainment

2.00 (audio) Please indicate the one which you would like us to briefly summarize for you.

3.00 (keyboard)

4.00 (action) Review routines are not yet implemented/*9.00/
(CRT) (Go to appropriate descriptions and examples in dictionary).

Branched to from Aylmer *1.00, 1.00
Branches back to Aylmer *2.00, 1.00

SCRIPT - Exploration of 4-year Colleges

by Lawrence Lerer

*1.00

1.00	(CRT, audio)	In thinking about our future, each one of us might have considered continuing our high school career by going on to some other school for additional education. With the programs you are using you will be able to find out some special information about such schools that could be helpful in your planning your future and reaching decisions about what you could do after being graduated from high school.
2.00	(audio)	Please type the appropriate number next to the question noted on the screen before you.
2.00	(slide)	1. I want information about four-year colleges. 2. I want information about two-year programs. 3. I want information about employment opportunities immediately after high school.
3.00	(audio)	If for example you planned to go to work right after high school, and wanted information about the world of work you would press #3. Now please make your choice.
4.00	(keyboard)	
5.00	(action)	3/You have pressed three. That means you want to know about work opportunities now/.do. Aylmer, *2.00, 1.00/ 2/You have pressed two. That means you want information about two-year programs. The script for two-year colleges has not yet been implemented. Meanwhile number 1 is a better choice/*2.00/ 1/You have pressed one. That means you want to know about four-year colleges/*2.00/

*2.00

1.00	(audio)	On the screen, and on a piece of paper being prepared for you, a list of some common factors influencing college choices has been prepared.
1.00	(slide)	A. Desirable geographic location B. Special course offerings C. Financially feasible D. Current academic standing E. Outside forces; family, tradition, friends F. Reputation of the school (high status)
2.00	(audio)	The list you have just received is yours to keep, take home, and discuss with your family, friends, teachers, counselors. Whenever you want to you may come back for additional help. Now, however, let us turn our attention to the list on the screen, and press the appropriate letter on the keyboard that corresponds to the letter next to the item you have chosen to explore.
3.00	(keyboard)	
4.00	(action)	A/You have selected the item dealing with geographic location/*3.00/

Note: Frames 3.20, 3.30, 3.40, 3.50, 3.60 have not been implemented. For demonstration purposes, choose "A."

B/You have selected the item dealing with special course offerings/*3.20/

C/You have selected the item dealing with costs/*3.30/

D/You have selected the item dealing with your academic success to date/*3.40/

E/You have selected the item dealing with outside influences/*3.50/

F/You have selected the item dealing with the reputation of the school/*3.60/

*3.00

1.00	(slide)	Map of U. S. divided into 9 areas (New England, Mid-Atlantic, South-Atlantic, N. Central, S. Central, Midwest, Northwest, California area, Southwest: #1 - under each area)
2.00	(audio)	On this map of the U. S., there are 9 major geographic divisions. Type the number of the area you would like to know more about.
3.00	(keyboard)	
4.00	(action)	1/You have selected New England/*4.00/ 2/You have selected the Mid-Atlantic area /*4.10/ 9/You have selected the Southwest/*4.80/

Note: Frames 4.10 through 4.80 have not been implemented. Choose #1.

*4.00

1.00	(slide)	Specific area selected appears on CRT
1.00	(CRT)	The New England Area
2.00	(audio)	The area you have selected is a large one with many colleges and universities.
2.00	(slide)	Area with major cities and colleges noted
3.00	(audio)	If you would like a print-out of this map to take with you for additional study, type "yes"; if not type "no."
4.00	(keyboard)	
5.00	(action)	Yes/print-out/*4.00/ No/ /*5.00/

	*5.00		
	1.00	(audio)	As you look at the map of New England with the colleges noted, you will see that there are many four-year schools in this area. If you would like to explore specific information about these colleges we can go back to our earlier list and select another item. If you have enough information for now, type "off." If you want to get more information, type "more."
	2.00	(keyboard)	
Note: Goes back to frame *2.00 of Aylmer	3.00	(action)	Off/ /#(return) More/ /*2.00, 2.00/

Branched to from: Aylmer, Explore, Wolff
Branches to: Wolff

Choosing a Job by Characteristics

by

Richard Durstine
Lynne Fitzhugh

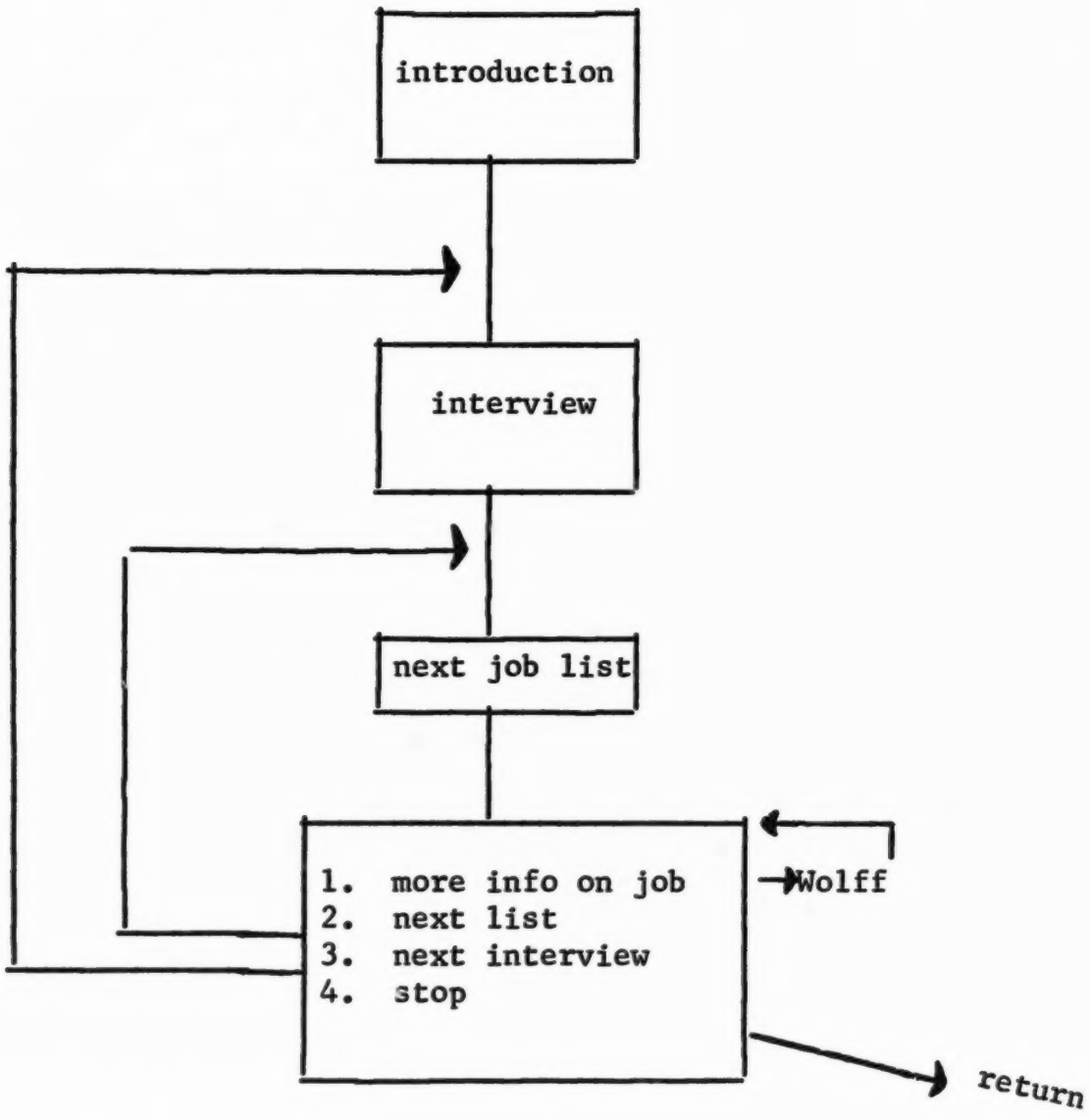
There are, for the Durstine script, three types of possible interaction: with inquirers who have never had the interview before, with those who just finished their first interview, and with those who have had the interview before. He has written text appropriate to each group, and given adequate though difficult instructions to follow the script.

You can always count on items with the first decimal place the same to be grouped and sequential.

The introduction is followed by the interview proper. This begins (frame 20) with a choice of those aspects of careers that seem important. This answer is saved, and used later. Everyone receives items 31 and 32. Then the answer to 20 is used to decide if a person should receive frames 41, 42, 43, 44, 45. Only those dealing with important aspects of the job are included.

Following the 40's the interview is complete. This leaves a list of possible jobs which may be for purposes of this demonstration as many as eleven.

A simplified flow chart follows.


introduction
interview
next job list
1. more info on job
2. next list
3. next interview
4. stop
Wolff
return

Explanation of coding system

Each script section is identified by a descriptive code number. The first two digits identify the section of the interview.

10. = Introduction

11. = Summary of previous interview

20. = General category selection

31. = Activities selection

32. = Aptitudes selection

41. = Physical demands selection

42. = Working conditions selection

43. = Education selection

44. = Salary selection

45. = Security selection

50. = List of 10 jobs

51. = If more than 10 jobs total

52. = If 10 or less total

53. = If no jobs total

60. = Summary description

70. = Detailed description

The third digit represents the serial number of the interview for the inquirer:

.1 = First Interview

.2 = Second Interview

.3 = Third Interview

.0 = Any Subsequent Interview

The final digit represents the serial number of the passage through the sequence of questions during the present interview:

.1 = First time, sequential flow

.2 = Second time, sequential flow

.3 = Return loop from farther on in interview, first time

.4 = Return loop from farther on, any subsequent time

.0 = Any subsequent time, sequential flow

Where there is an additional digit in the code number it indicates that this is one of the variations in a cycle, as described earlier.

The letters in the column to the left of the text indicate the form and type of the activity represented in the text:

A = Audio message from system to inquirer

CRT = Information presented by cathode ray tube

Copy = Message printed on paper

I = Reaction by system to the various possible meaningful responses by the inquirer. Error messages for null or nonsense responses should be provided as well.

In the description of the processing of inquirer's response, R denotes "reject all jobs" and I denotes "include all jobs" that have the given characteristics. After "R" or "I" are given the contents of and addresses in the data base (based on the recent User's Manual and Description of DOT Tape, both by L. Wolff), on which the rejections or inclusions will be based.

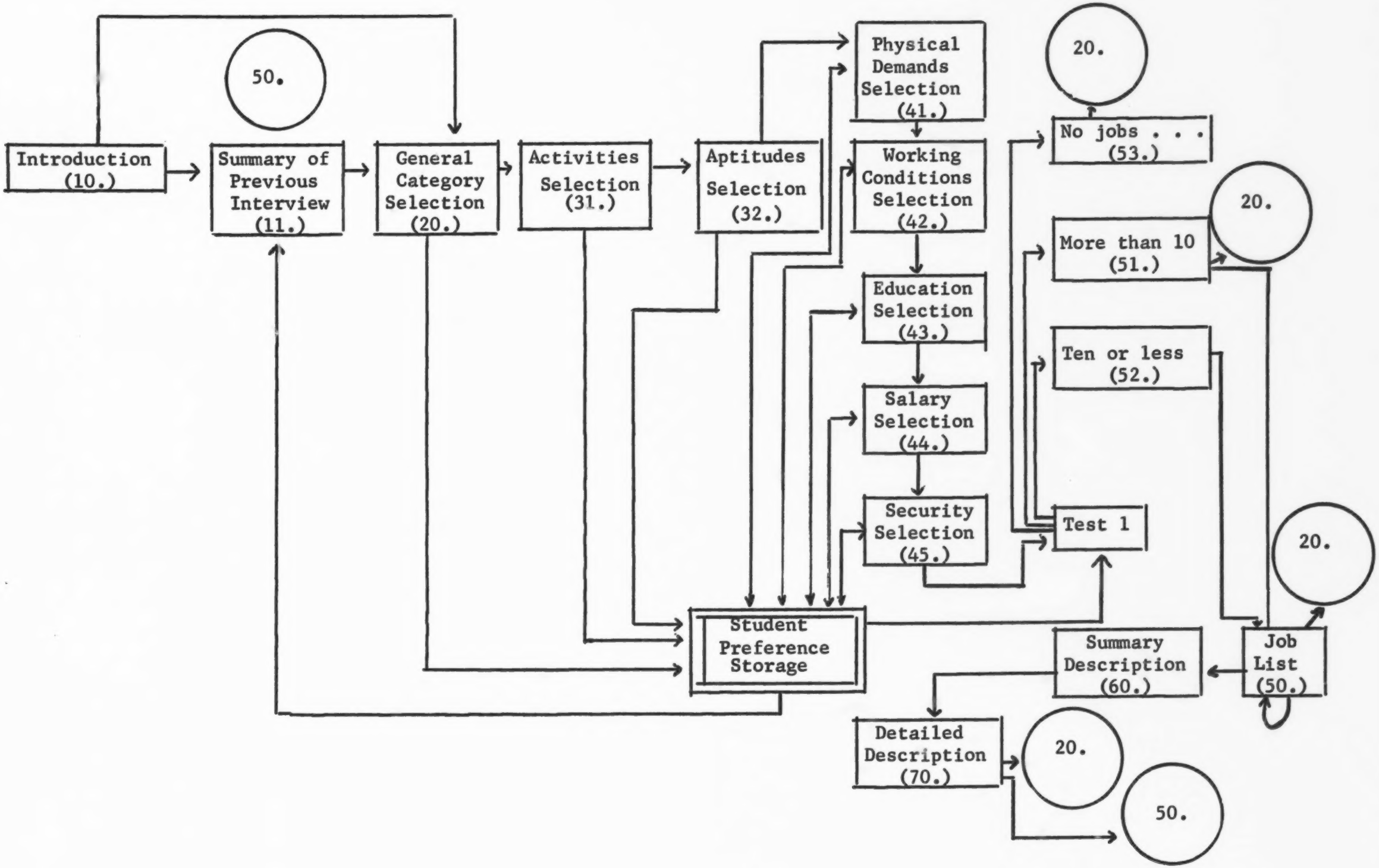
The preferences stated by the inquirer will be preserved in a "Student Preference Storage" facility provided for the purpose. Any other

information which needs to be preserved from the interview (e.g., lists of selected jobs) should be included here as well. This storage facility will be used in the selection of lists of jobs that fit the inquirer's requirements, in retaining such lists, and as a source of information for summaries of the interview.

The script for the summary of previous interviews has not yet been prepared. An outline and rough format of its contents are given instead.

Figure 1: Flow of Events in Job Selection Interview

(numbers in circles are addresses for branches to other points of the interview sequence)



I. FIRST INTERVIEW, FIRST TIME THROUGH

*10.11 (Introduction, First Interview)

A A great deal of information about many jobs is now at your disposal. You are encouraged to explore it in whatever way you wish.

You may use the information to help you decide on and plan a specific career, or you may use it to satisfy your curiosity about a wide range of job interests. You can let the computer guide you through the material by simply responding to its programmed questions, or you can take over, when you are familiar with the program, and guide the computer in the directions that best suit your purpose.

Whichever your approach, it is necessary for the computer to understand your questions and responses, and it must, of course, have the data you request in store. The series of statements and responses following this introduction and leading up to the list of selected occupations for your exploration has been designed to provide you with free access to the stored information. Follow the directions closely. If you find you are in an avenue which does not interest you, there is usually a way to go back and choose a different one. Likewise, if you wish to revise your responses so as to get a better list of jobs from the computer, you may do so any number of times. All this will become plain to you during the interview.

Good exploring!

/Go to *20.11/

*20.11 (Selection of Categories, First Interview, First Time)

A There are many things about jobs that appeal to people. Some of these are steady work, good pay, a chance to get ahead. To help decide which possibilities you might look at in detail, you should indicate which things are most important to you.

CRT A
1. The physical demands placed upon you
2. The working conditions you are likely to experience
3. The level of education you would need
4. Your likely level of income
5. Opportunities for security or advancement

A Indicate as many or as few of these five categories as you like. Pick the ones you think will be most important to you in choosing a career. You will have a chance to change your choice later if you wish.

I /Inquirer Response——→ to Student Preference Storage/

/Go to*31.11/

*31.11 (Activities Selection, First Interview, First Time)

A There are surely some types of activity you prefer over others. On the screen you see five possible choices. These choices will be used to help select job possibilities for you to consider.

CRT A
A.1 Dealing with things and objects

or

A.2 Dealing with people and communicating ideas.

B.1 Doing business work

or

B.2 Doing scientific or technical work.

C.1 Routine, organized work

or

C.2 Creative or unstructured work.

D.1 Working in social situations

or

D.2 Working with machines and processes.

E.1 Getting praise or prestige from others

or

E.2 Working mainly for your own satisfaction

A Make as many or as few choices as you like, but not both alternatives of a pair. Where you have no definite feeling, make no choice. These choices can be changed later.

I A.1 ⟶ Reject if 6 in 9.1, 9.2, or 9.3

A.2 ⟶ R if 1 in "

B.1 ⟶ R if 7 in "

B.2 ⟶ R if 2 in "

C.1 ⟶ R if 8 in 9.1, 9.2, or 9.3

C.2 ⟶ R if 3 in "

D.1 ⟶ R if 9 in "

D.2 ⟶ R if 4 in "

E.1 ⟶ R if Ø in "

E.2 ⟶ R if 5 in "

/Inquirer Responses ⟶ to Student Preference Storage/

/Go to *32.11/

*32.11 (Aptitudes Selection, First Interview, First Time)

A Fine, let's go on now.

Everyone has certain talents or aptitudes which cause him to do some things better than others. Here is a list of some such aptitudes. Indicate those in which you feel yourself strong (better than most people your age) and in which weak. If you feel you are about average, indicate nothing for that aptitude.

CRT A
G1. High in general intelligence
G2. Low in general intelligence
V1. High in ability to use words and language
V2. Low in ability to use words and language
N1. High in ability with mathematics and numbers
N2. Low in ability with mathematics and numbers
P1. High in ability to interpret pictures or forms in space
P2. Low in ability to interpret pictures or forms in space
C1. High in ability to do clerical work
C2. Low in ability to do clerical work
M1. High in ability to work with hands and fingers
M2. Low in ability to work with hands and fingers

A Make as many or as few selections as you like. These can be changed later if your ideas about these things change.

I G1 ⟶ R if 4 or 5 in DOT 10.1
G2 ⟶ R if 1 or 2 in "
V1 ⟶ R if 4 or 5 in DOT 10.2
V2 ⟶ R if 1 or 2 in "

N1 ⟶ R if 4 or 5 in DOT 10.3

N2 ⟶ R if 1 or 2 in "

P1 ⟶ R if 4 or 5 in DOT 10.4, DOT 10.5

P2 ⟶ R if 1 or 2 in "

C1 ⟶ R if 4 or 5 in DOT 10.6

C2 ⟶ R if 1 or 2 in "

M1 ⟶ R if 4 or 5 in DOT 10.7, DOT 10.8, DOT 10.9

M2 ⟶ R if 1 or 2 in "

/Inquirer Responses ⟶ to Student Preference Storage/

/Go to *41.11/

*41.11 (Physical Demands Selection, First Interview, First Time)

/If no response to item 1 of *20.11, go to *42.11/

A You showed an interest in the physical demands that your work will place on you.

Please indicate first the heaviest lifting or carrying you wish to consider.

CRT
1. Very light (occasional lifting, ten pounds maximum)
2. Light (twenty pounds maximum)
3. Medium (50 pounds maximum lifting)
4. Heavy lifting (100 pounds maximum)
5. Very heavy lifting (more than 100 pounds)

I
1 R if L, M, II, V in DOT 14.1
2 R if M, II, V in DOT 14.1
3 R if H, V in DOT 14.1
4 R if V in DOT 14.1
5 (No rejections)

/Inquirer Responses——→ to Student Record Storage/

A Now which of the following kinds of activities do you want to exclude from your work. Name as many as you wish. As usual, these choices can be changed later.

CRT A
11. Climbing or balancing
12. Bending your body - that is, stooping, kneeling, crouching, or crawling
13. Extensive use of your hands (reaching, handling, fingering or feeling)
14. Talking, hearing, or understanding sounds
15. Seeing accurately or watching carefully

/Inquirer Response ⟶ to Data Base/

I 11 ⟶ R if 2 in 14.2

12 ⟶ R if 3 in 14.3

13 ⟶ R if 4 in 14.4

14 ⟶ R if 5 in 14.5

15 ⟶ R if 6 in 14.6

/Inquirer Responses B ⟶ to Student Preference Storage/

/Go to *42.11/

*42.11 (Working Conditions Selection, First Interview, First Time)

/If no response to item 2 of *20.11, go to *43.11/

A You indicated an interest in working conditions. There are a number of different kinds of working conditions that might influence a person's choice of occupations. Some are things he seeks as desirable. Others are things he tries to avoid.

First you will be given a set of characteristics that you might strongly desire, and then a set you might wish to avoid. Indicate as many things in each set as you like. But be careful not to contradict yourself or you may find that no possibilities are left open to you. If that happens to you in fact, there is no great harm done, but you will have to revise your selection of job characteristics.

Now indicate which of the following characteristics you would very much like your job to have. Name as many as are important to you.

CRT 1. Workers in this occupation are usually males.

2. Workers in this occupation are usually females.

3. Work is mostly indoors.

4. Work is mostly outdoors.

5. Work is normally on weekdays only.

6. Work is normally regular daylight hours only.

7. Long distance or overnight travel is involved.

I 1——→ I if 1, 2 or 9 in 19

2——→ I if 4, 5 or 9 in 19

3——→ I if I or B in DOT 15.1

4——→ I if O or B in DOT 15.1

5——→ I if 1, 2 or 9 in 22

6 ⟶ I if 1, 2 or 9 in 23

7 ⟶ I if 1, 2 or 9 in 24

/Inquirer Response ⟶ to Student Preference Storage/

A So much for the positive traits you would desire of your work. Now consider some traits you might want to avoid. Indicate from the list below those traits that would cause you to strongly avoid an occupation. Note that some of these traits also appeared on the preceding list of positive characteristics, because some people will seek what others avoid. Take care, then, not to be inconsistent. As usual, your choices can be adjusted later if you like. Here is the list.

CRT A

11. Workers in this occupation are predominantly males.
12. Workers in this occupation are predominantly females.
13. Workers are exposed to extreme cold.
14. Workers are exposed to extreme heat.
15. Workers are often in wet or damp places.
16. There is much noise and vibration.
17. The work is often hazardous.
18. There are often fumes, odors, dust, or bad ventilation.
19. Work is usually indoors.
20. Work is usually outdoors.
21. There is frequent weekend work.
22. There is frequent night work.
23. Long distance or overnight travel is often involved.

I 11 ⟶ R if 1 or 2 in 19

12 ⟶ R if 4 or 5 in 19

13 ⟶ R if 2 in DOT 15.2

14 ⟶ R if 3 in DOT 15.3

15 ⟶ R if 4 in DOT 15.4

16 ⟶ R if 5 in DOT 15.5

17 ⟶ R if 6 in DOT 15.6

18 ⟶ R if 7 in DOT 15.7

19 ⟶ R if I in DOT 15.1

20 ⟶ R if 0 in DOT 15.1

21 ⟶ R if 3 in 22

22 ⟶ R if 3 in 23

23 ⟶ R if 1 in 24

/Inquirer Response ⟶ to Student Preference Storage/

/Go to *43.11/

*43.11 (Education Selection, First Interview, First Time)

/If no response to item 3 of *20.11, go to *44.11/

A Clearly you recognize that education is very important to the kind of work you will eventually do. Indicate below the type and highest level of schooling you expect for yourself. If you are not quite sure, make one choice now and try some other one later on. Your choice here will be used to select jobs that are appropriate to your expected educational level, but that do not require a higher level. Here is the list. Indicate your highest level.

CRT A

1. Not complete high school
2. Complete Academic high school
3. Complete vocational high school
4. Schooling (business or technical school, junior college) after high school, less than full college
5. Full college
6. Post graduate work after college

I 1 ⟶ I if 1 or 9 in 17 or 1 in 18

2 ⟶ I if 2 or 9 in 17 or 2 in 18

3 ⟶ I if 3 or 9 in 17 or 3 in 18

4 ⟶ I if 4, 5, 6 or 9 in 17 or 4, 5, 6 in 18

5 ⟶ I if 7 or 9 in 17 or 7 in 18

6 ⟶ I if 8 or 9 in 17 or 8 in 18

/Inquirer Responses ⟶ to Student Preference Storage/

/Go to *44.11/

*44.11 (Salary Selection, First Interview, First Time)

/If no response to item 4 of *20.11, go to *45.11/

A In the beginning and throughout your working life salary is naturally a very important part of your choice of a career.

There is so far very little reliable information available on salaries and wages. Some selection can be made, however, in terms of today's income levels by typical members of various jobs and professions. You can help in selecting jobs for your further detailed consideration by stating if

CRT A
1. You would be satisfied by relatively low income (less than $7500 yearly, which is to say less than $150 weekly or $3.75 hourly.)
2. You would be satisfied with eventually at least middle income, that is, up to $15,000 yearly or $300 weekly.
3. You want to have a good chance of higher income, that is, over $15,000 yearly.

I 1——→ I everything

2——→ R if less than 7500 in either 13.6-10 or 13.11-15; or less than 150 in 12.4-6 or 12.7-9; or less than 3.75 in 11.5-8 or 11.9-12

3——→ R if less than 15,000 in either 13.6-10 or 13.11-15; or less than 300 in 12.4-6 or 12.7-9; or less than 7.50 in 11.5-8 or 11.9-12

/Inquirer Response——— to Student Preference Storage/

/Go to *45.11/

*45.11 (Security Selection, First Interview, First Time)

/If no response to item 5 of *20.11, go to Test 1/

A Since you mentioned desire for security and advancement, some of the factors that might appeal to you are listed below. Please indicate those you would find particularly important for your work to have. Indicate as many as you like. You will have a chance to change these and try other possibilities later if you care to.

CRT A
1. Employment is not affected by seasonal fluctuations in demand for workers.
2. Self employment is an eventual possibility.
3. An increasing number of employment opportunities is expected.

I 1 ⟶ R if 1 in 25

2 ⟶ R if 2 in 29

3 ⟶ R if 1 or 2 in 31

/Inquirer Responses ⟶ to Student Preference Storage/

/Go to Test 1/

Test 1 (Internal to System)

/Form list of selected jobs based on student choices given above/

/Store total list of selected jobs in Student Preference Storage/

/Count selected jobs - If more than 10, go to *51.00 with number added

Count selected jobs - If less than 10, go to *52.00

Count selected jobs - If zero, go to *53.00/

*51.00 (If there are more than 10 jobs remaining on the list)

A The choices you have made have been such that there are [ ] occupations which fit the specifications you named. You can go back and change some of your choices if you like, or you can be given a list of ten of the most popular jobs on the list to select from for further information about the individual job. Check only one of the choices below.

CRT A
1. Go back and change some of my choices.
2. Get a list of ten popular jobs from the list.

I 1 ⟶ Go to *20.14 if first return or otherwise to *20.04.

2 ⟶ Go to *50.00

*52.00 (If there are less than 10 but not zero jobs in the list)

A You will now be given a list of the jobs that suit your conditions.

/Go to *50.00/

*53.00 (If there are no jobs on the list)

A Your requirements are so strict that you have one way or another eliminated all the jobs that are included here. You will now be given the opening part of this procedure again. Try to select somewhat less demandingly than you did before.

/Go to *20.14 if first return, or otherwise to *20.04/

List Selection: There needs to be established a rating of jobs in Student Preference Storage by groups of 10 for delivery to the inquirer.

*50.00 (List of 10 jobs, any interview, any time through, from anywhere)

A On the screen is a list of ten jobs for you to explore.

CRT 1. Title; I.D.#

2. " "

3. " "

4. " "

5. " "

6. " "

7. " "

8. " "

9. " "

10. " "

/Retain List in Student Preference Storage/

A Choose one at a time those which interest you. If none interest you, your other choices are:

CRT 11. Return to the beginning

A

12. Get next 10 jobs, if there are more.

/Inquirer Response/

I 1-10.——— Go to *60.00 of # chosen

11.——— Go to *20.14 (first return) or otherwise to *20.04

12.——— Go to next *50.00

*60.00 (Summary Description, any interview, any time through)

Copy /For example, first paragraph of job description as presented in "A Procedure for Writing Job Descriptions by Computer," by L. Wolff/

A If you want more information on this job, you should choose to go on to the next part. Otherwise, ask for another job on your list or go back to the beginning of the interview.

CRT A
1. Get detailed description
2. Return to list for another choice
3. Return to beginning
4. Get names of next ten jobs, if there are more

/Inquirer response/

1. To *70.00 of above I.D.#
2. To CRT *50.00/1-10
3. To *20.14 (if first return) or *20.04.
4. Go to next *50.00

*70.00 (Detailed Description, any interview, any time through)

Copy /Remainder of description as prepared by L. Wolff/

A Now you may choose to

CRT A
1. (onward choices, not yet defined)
2. Return to the beginning of the interview
3. Return to your list of jobs
4. Get names of next ten jobs, if there are more

/Inquirer response/

1. (not yet available)
2. To *20.14 (if first time) or *20.04
3. To CRT *50.00/1-10
4. Go to next *50.00

II. FIRST INTERVIEW; SECOND TIME THROUGH

*20.14 (Selection of Categories; First Interview, Second Time, From Farther in Interview)

A You have chosen to return to the beginning of the interview. Now you know that the choices you make will be used by the computer to pick a list of jobs which may be of interest to you. If you change any of your choices you will get a slightly different, or perhaps very different, list this time. You may want to leave some of the sections the same as before, in which case indicate only the final alternative in the list which says "Retain my previous choices."

Here is the first selection. Choose any of the alternatives which you feel are important in considering a job for yourself.

CRT /list, as under *20.11/

plus: 6. Retain my previous choices

I /Process inquirer response, as under *20.11; if "6," retain previous responses in Student Preference Storage/

/Go to *31.12/

*31.12 (Activities Selection, First Interview, Second Time)

A Now, if you remember, you should give some thought to the kinds of activities listed on the screen and select those which you prefer. Make as many or as few choices as you like, but not both alternatives of a pair. If you have no definite preference in one area, make no choice. The choices may be changed later if you want.

CRT /list, as under *31.11/

plus: F. Retain my previous choices

I. /Process inquirer response, as under *31.11; if "F," retain and use previous responses/

/Go to *32.12/

*32.12 (Aptitudes Selection, First Interview, Second Time)

A One is not always sure about his talents and weaknesses, but since your own will play a role in the job you choose, you should try to judge yourself in these terms. Some areas in which you may or may not have ability are listed. Select only those in which you feel you are better or worse than most people your age. Do not select any in which you think you are about average.

CRT
A /list, as under *32.11/

plus: N. Retain my previous choices

A Make as many or few choices as you want without contradicting yourself. You will as usual be able to change your choices later if you are unsure, or if your ideas change again.

I /Process inquirer response, as under *32.11; if "N," retain and use previous responses/

/Go to *41.12/

*41.12 (Physical Demands Selection, First Interview, Second Time Through)

/If no response to item 1 of *20.14, go to *42.12/

A Since you feel that the physical demands of a job are important to you, please indicate the heaviest lifting you would want to do.

CRT A /list A, as under *41.11/

plus: 6. Retain my previous choices

I /Process inquirer response, as under *41.11; if "6," retain and use previous responses/

A Which of the next list of activities would you definitely not want to do in a job? Take into account mainly the actual physical disabilities you may have, such as poor eyesight, stuttering, fear of heights, etc. If you have other dislikes you may include them but remember that they will further limit the list of jobs you are given and may exclude some which would have greater advantages to you than the disadvantage of a minor physical dislike.

CRT A /list B, as under *41.11/

plus: 16. Retain my previous choices

I /Process inquirer response, as under *41.11; if "16," retain and use previous responses/

/Go to *42.12/

*42.12 (Working Conditions Selection, First Interview, Second Time Through)

/If no response to item 2 of *20.14, go to *43.12/

A There are two parts to this section of the interview. You have stated an interest in the working conditions a job might impose on you. In the first part of this section you should indicate those working conditions

which you would strongly desire. In the second part you should indicate those which you would strongly wish to avoid. Choose as many of the alternatives in each part as you wish, but do not contradict yourself, and remember that each choice you make will limit the list of jobs offered you. If this happens, you may revise your choices later.

Which of these characteristics would you want your job to have?

CRT A /list A, as under *42.11/

plus: 8. Retain my previous choices

I /Process inquirer response, as under *42.11; if "8," retain and use previous responses/

A Which of the characteristics shown below would you strongly wish to avoid? If you don't care, indicate nothing for that alternative.

CRT A /list B, as under *42.11/

plus: 24. Retain my previous choices

I /Process inquirer response, as under *42.11; if "24," retain and use previous responses/

/Go to *43.12/

*43.12 (Education Selection, First Interview, Second Time Through)

/If no response to item 3 of *20.14, go to *44.12/

A The level of education you attain will be one of the most important factors in the job you eventually hold. You may not be sure now how far you will go, but give the question serious thought and indicate the highest level you feel at this time you would like to, and could, attain. As usual, you will have the chance to change your choice later.

CRT A /list, as under *43.11/

plus: 7. Retain my previous choices

I /Process inquirer response, as under *43.11; if "7," retain and use previous responses/

/Go to *44.12/

*44.12 (Salary Selection, First Interview, Second Time Through)

/If no response to item 4 of *20.14, go to *45.12/

A You have said that salary is an important job factor for you. Although there is very little reliable information on salaries today, indicate the level of income you think would satisfy you, and whatever data the computer has will influence your selection of jobs. Be as realistic as you can at this stage. You may, of course, always change your mind on a later run through the interview.

CRT /list, as under *44.11/

plus: 4. Retain my previous choices

I /Process inquirer response, as under *44.11; if "4," retain and use previous responses/

/Go to *44.12/

*45.12 (Security Selection, First Interview, Second Time Through)

/If no response to item 5 of *20.14, go to "Test 1"/

A According to your earlier choice, job security is an important factor to you. Security in a job may take several forms, some of which are listed here. Indicate as many of these as you feel might be the kind of security you would like to have.

CRT /list, as under *45.11/

plus: 5. Retain my previous choices

I /Process inquirer response, as under *45.11; if "5," retain and use previous responses/

/Go to "Test 1"/

III. INTRODUCTION TO SECOND AND THIRD INTERVIEWS

*10.21 (Introduction, Second Interview)

A Some time may have passed since your first interview, so let us briefly review the instructions. If last time you had a chance to return more than once from the list of jobs to the beginning of the interview, you know that you have opportunities to change your mind about the characteristics of jobs which interest you. You will be able to do that again this time, and in each interview following, so experiment, and explore. Be careful, though, not to contradict yourself or you will find that you have cancelled out all the jobs and will then have to repeat the interview in order to obtain a list of titles to examine.

If you do not wish to go through the interview again you may begin with the list of jobs you were working on in your first interview.

/Go to *11.00/

*10.31 (Introduction, Third Interview)

A Welcome back for a third exploration of jobs. You are probably quite familiar with the interview by now, but let us go over the instructions once again. You first choice will be whether to begin with a clean slate, or to begin where you left off last time, that is, in the exploration of your last list of jobs. If you begin with the interview, remember to be consistent in your choices. If you begin with the list, don't forget that you may go back to the interview whenever you have finished exploring the jobs which interested you. Follow directions, and ask your counselor for help if you need it.

/Go to *11.00/

IV. SUMMARY OF PREVIOUS INTERVIEW

*11.00 (Summary, Any Interview After the First, Any Time Through, From Anywhere)

A Here is a summary of your previous time through the interview.

You 1. Completed

2. Did not complete

the interview as far as the selection of a list of jobs for exploration. You had indicated an interest in and preferences for (the following display is suggestive only, indicating the content of this summary):

CRT 3. 20. PREVIOUS INTERVIEW; LAST TIME THROUGH;/CHOICES

4. 31. " " " " " "

5. 41A. " " " " " "

6. 42A. " " " " " "

7. 44. " " " " " "

8. 45. " " " " " "

You said you would not want

9. 41B. " " " " " "

10. 42B. " " " " " "

and that you felt yourself

11. 32. " " " " " "

and hoped to

12. 43. " " " " " "

A /If #1 above/ The list you obtained from your last interview selection included 13-23, (list from *50.00 previous interview last time through).

CRT A Now you may choose a title from this list, or take one of the choices below:

24. Give me liast of next 10 jobs

25. Return to beginning of interview

/Inquirer Response/

13-23. ——→ Go to *60.00 for number chosen

24. ——→ Go to next *50.00

25. ——→ Go to *20.00

/If #2 above/

A Because you did not get far enough last time to obtain a list of jobs, you should begin again with the interview and either make the same choices as last time, or revise them.

/Go to *20.00/

V. CYCLED SCRIPTS: INTRODUCTION

*10.00.1 (Introduction, Any Interview After the Third, First Variation)

A Now that you have been through these interviews several times you may already may know just how you want to use your time. If not, you may decide when you hear the summary of your last interview. Remember to avoid contradicting yourself whenever you revise your selection of jobs through the interview.

/Go to *11.00/

*10.00.2 (Introduction, Any Interview After the Third, Second Variation)

A You are by now an old hand at using these interviews to obtain information about jobs which might suit you. Perhaps you have even had a chance to do some extra homework on the jobs you found interesting last time. That is the way to get more personal and complete information than could be included in the computer storage. Your counselor will gladly help you find the books or arrange interviews which will satisfy your needs. For the time being, continue with your exploration of the jobs here.

/Go to *11.00/

*20.00.1 (Category Selection, Any Interview After the First, First Time, First Variation)

A Here is the list of some factors you may feel are important to you in your consideration of jobs.

CRT A /list, as under *20.14/

A As you see, you will again be able to use the same choices you made last time by indicating the final alternative listed. If you wish to change any of your choices, however, indicate all of the alternatives which seem important to you. Later, as before, you will be asked to state your requirements in the areas you choose here. These will influence the job list you receive.

I /Process inquirer response, as under *20.14/

/Go to *31.00/

*20.00.2 (Category Selection, Any Interview After the First, First Time, Second Variation)

A Which of the listed categories would you think were important if you were an employer interviewing an applicant for a job? You would want to know whether the person would be qualified to do good work in the job, and whether he, personally, would be happy doing it. As the applicant, you would probably want to know the same things.

CRT /list, as under *20.14/

A Indicate the categories you feel are important. You may choose, also, to keep the selection you made here in your last interview. If so, indicate the number 6 only.

I /Process inquirer response, as under *20.14/

/Go to *31.00/

*20.00.3 (Category Selection, Any Interview After the First, First Time, Third Variation)

A Which of these categories do you feel are important considerations to make when choosing a job?

CRT A /list, as under *20.14/

A You will have a chance later to indicate your requirements within the areas you choose here. If you want your previous interview choices retained, indicate number 6 on the list. Remember that you may return as often as you like to revise any of your selections in the interview.

I /Process inquirer response, as under *20.14/

/Go to *31.00/

*20.04.1 (Category Selection, Any Interview After the First, Any Time, First Variation)

A Here again is the first selection of categories. Your choice is among five aspects of work which you might consider important in planning your career.

CRT A /list, as under *20.14/

A Which of them would you want to consider? If you feel the same as last time about the categories, you may elect to retain your previous choices.

I /Process inquirer response, as under *20.14/

/Go to *31.00/

*20.04.2 (Category Selection, Any Interview After the First, Any Time, Second Variation)

A You want to revise your interview again. Good. You may begin by reconsidering the list of general job requirement areas.

CRT A /list, as under *20.14/

A Do you wish to change your selection this time? If so, choose those aspects you want to discuss in greater detail later. If not, indicate choice 6, and your earlier selection will be applied again.

I /Process inquirer responses, as under *20.14/

/Go to *31.00/

*20.04.3 (Category Selection, Any Interview After the First, Any Time, Third Variation)

A You are back again at the start of the selection process. Here is the first list from which you can choose your preferences. In this case, choose those categories which you would consider when planning your career or looking for a job.

CRT /list, as under *20.14/

I /Process inquirer response, as under *20.14/

/Go to *31.00/

*20.04.4 (Category Selection, Any Interview After the First, Any Time, Fourth Variation)

A Here again is your first set of alternatives. Choose as many of these as you feel would influence your choice of a job. You will be asked to state your requirements in these areas later on in the interview.

CRT /list, as under *20.14/

I /Process inquirer responses, as under *20.14/

/Go to *31.00/

*20.04.5 (Category Selection, Any Interview After the First, Any Time, Fifth Variation)

A The first set of alternatives, as you may recall, contains aspects of jobs which will affect your decision to enter a job. Not all of them will seem important to you. Indicate those which are. Indicate as many

as you wish, or "6" if you wish a repetition of your previous selection.

CRT /list, as under *20.14/

I /Process inquirer responses, as under *20.14/

/Go to *31.00/

*31.00.1 (Activities Selection, Any Interview After the First, Any Time, First Variation)

CRT /list, as under *31.12/

A Now you see five pairs of alternative activities you might be expected to do in a job. Choose one of the alternatives from each pair if you have a definite preference for that kind of activity. Do not choose both alternatives of the same pair or you will eliminate all jobs from your list. If you have no feeling about either alternative, indicate nothing for that pair.

I /Process inquirer responses, as under *31.12/

/Go to *32.00/

*31.00.2 (Activities Selection, Any Interview After the First, Any Time, Second Variation)

CRT /list, as under *31.12/

A The five pairs of alternatives on the screen now are types of work activities which might be involved in a job you hold someday. You have made several selections from the list before and know that this question requires some self-evaluation. Go through them again carefully, and remember, don't indicate both alternatives of the same pair. If you like (or dislike) both alternatives of the same pair just leave that pair unanswered.

I /Process inquirer responses, as under *31.12/

/Go to *32.00/

*31.00.3 (Activities Selection, Any Interview After the First, Any Time, Third Variation)

/List, as under *31.12/

CRT Once again, choose one of the alternatives from each pair of activities about which you have some feeling of preference. Do not pick both parts of the same pair even if you like them both. Leave that pair blank, and also those you have no feeling about one way or the other.

I /Process inquirer responses, as under *31.12/

/Go to *32.00/

*32.00.1 (Aptitudes Selection, Any Interview After the First, Any Time, First Variation)

A Think carefully about yourself again, and decide in which of the listed areas you are stronger or weaker than most of your classmates. If you think you are about average in any area leave it blank. You know, of course, that you can always come back and change your selection if you change your mind.

CRT /list, as under *32.12/

I /Process inquirer responses, as under *32.12/

/Go to *41.00/

*32.00.2 (Aptitudes Selection, Any Interview After the First, Any Time Through, Second Variation)

A These are, again, areas in which you may or may not have some ability, or you may be about average. If you feel you are average, make no indication for that area. Otherwise, indicate where you are better than most of your classmates, or where you are not as good as most. Later, you may come back and change your choices again if you want.

CRT /list, as under *32.12/

I /Process inquirer responses, as under *32.12/

/Go to *41.00/

*32.00.3 (Aptitudes Selection, Any Interview After the First, Any Time Through, Third Variation)

CRT /List, as under *32.12/

A Among the alternatives listed, in which areas do you think you are better or worse in than most people your age? Indicate as many as you wish. Leave blank all the areas you feel you have average ability in, and don't forget, this is not an easy selection to make and you can come back as often as you wish to change it.

I /Process inquirer responses, as under *32.12/

/Go to *41.00/

*32.00.4 (Aptitudes Selection, Any Interview After the First, Any Time Through, Fourth Variation)

A The talents and abilities people have often determine their success in the job they choose. If you feel you have special strengths or weaknesses in any of the areas listed you should indicate them here. You may feel you are more average in some areas than you are strong, or weak. If so, indicate nothing for that area. You can always return, as you have been doing, to revise your selections.

CRT /list, as under *32.12/

I /Process inquirer responses, as under *32.12/

/Go to *41.00/

*41.00.1 (Physical Demands Selection, Any Interview After the First, Any Time Through, First Variation)

/If no response to item 1 or *20.00 or *20.04, go to *42.00/

A In the beginning of this set of selections you stated that the Physical Demands of a job were important factors to you.

What is the heaviest lifting and carrying you would consider doing?

CRT /list A, as under *41.12/

A Which of these activities would you want to exclude from your work?

CRT /list B, as under *41.12/

I /Process inquirer responses, as under *41.12/

/Go to *42.00/

*41.00.2 (Physical Demands Selection, Any Interview After the First, Any Time Through, Second Variation)

/If no response to item 1 or *20.00 or *20.04, go to *42.00/

A You said earlier that you would like to impose some personal requirements on the physical activities a job might demand of you.

What is the heaviest lifting and carrying you would consider doing?

CRT /list A, as under *41.12/

A Which activities would you definitely not want to do?

CRT /list B, as under *41.12/

I /Process inquirer responses, as under *41.12/

/Go to *42.00/

*42.00.1 (Working Conditions Selection, Any Interview After the First, Any Time, First Variation)

/If no response to item 2 of *20.00 or *20.04, go to *43.00/

A Here is the list of working conditions one might have in a job. Which of these would you like your job to include?

CRT /list A, as under *42.12/

A Now choose from this second list which conditions you would not want your job to include.

CRT /list B, as under *42.12/

I /Process inquirer responses as under *42.12/

/Go to *43.00/

*42.00.2 (Working Conditions Selection, Any Interview After the First, Any Time, Second Variation)

/If no response to item 2 of *20.00 or *20.04, go to *43.00/

A Since you stated an interest in the working conditions a job might have, choose those from the list which appeal to you.

CRT /list A, as under *42.12/

A Now choose those from the second list which do not appeal to you.

CRT /list B, as under *42.12/

I /Process inquirer responses, as under *42.12/

/Go to *43.00/

*43.00.1 (Education Selection, Any Interview After the First, Any Time Through, First Variation)

/If no response to item 3 of *20.00 or *20.04, go to *44.00/

A Education is perhaps the most important factor to consider in planning a career. You evidently realize this. Although you are probably uncertain about your educational plans at this time, which of the levels listed here would be the highest level you hope to complete?

CRT /list, as under *43.12/

I /Process inquirer responses, as under *43.12/

/Go to *44.00/

*43.00.2 (Education Selection, Any Interview After the First, Any Time Through, Second Variation)

/If no response to item 3 of *20.00 or *20.04, go to *44.00/

A You seem to appreciate the importance of your educational background since you stated an interest in this area earlier. What do you expect will be the highest educational level you will complete? This would, of course, be a guess, and you may not be sure at this stage. Try to answer the question anyway, and later if you wish to change your guess you may come back and do so.

CRT /list, as under *43.12/

I /Process inquirer responses, as under *43.12/

/Go to *44.00/

*44.00.1 (Salary Selection, Any Interview After the First, Any Time Through, First Variation)

/If no response to item 4 of *20.00 or *20.04, go to *45.00/

A Unfortunately, very little data is now available on the wages paid by various jobs. Whatever information there is will be given to you later when you inquire about particular jobs on your list.

First, please indicate which salary level you feel that you would be satisfied with eventually.

CRT /list, as under *44.12/

I /Process inquirer responses, as under *44.12/

/Go to *45.00/

*44.00.2 (Salary Selection, Any Interview After the First, Any Time Through, Second Variation)

/If no response to item 4 of *20.00 or *20.04, go to *45.00/

A If you could choose a certain level of income in which you thought you would be satisfied, which would it be?

CRT /list, as under *44.12/

A You said earlier that salary was an important job factor to you. Specific information on salaries, whenever it exists, will be given later in the descriptions of the jobs on your list.

I /Process inquirer responses, as under *44.12/

/Go to *45.00/

*45.00.1 (Security Selection, Any Interview After the First, Any Time Through, First Variation)

/If no response to item 5 of *20.00 or *20.04, go to "Test 1"/

A Here are four kinds of security a job might be able to offer you.

CRT /list, as under *45.12/

A Which of these would you find appealing? Choose as many as you like.

I /Process inquirer responses, as under *45.12/

/Go to "Test 1"/

*45.00.2 (Security Selection, Any Interview After the First, Any Time Through, Second Variation)

/If no response to item 5 of *20.00 or *20.04, go to "Test 1"/

A You indicated an interest in the security factors a job might have. Here are several for you to consider. Choose those which appeal to you.

CRT /list, as under *45.12/

I /Process inquirer responses, as under *45.12/

/Go to "Test 1"/

Branched to from: Durstine, Explore, Roe
Branches to: Durstine

A Procedure for Writing Job Descriptions by Computer
by Laurence Wolff

This memorandum suggests a procedure to enable a computer to write 850+ job descriptions in English sentences and paragraphs, based entirely on the 31 items of the CSED occupational data base (see "User's Manual for Occupational Descriptions," March 30, 1967) and on the 17 items on the tape of the Dictionary of Occupational Titles (see "Description of the Tape of the Dictionary of Occupational Titles," March 9, 1967).

The descriptions are not final products but examples of what is possible with the information now available. For use with students, the ISVD will have to simplify them and prepare alternate description forms for different situations. We also need to prepare CAI scripts to teach students about occupational terminology (in accordance with O'Hara's paper, "A Theoretical Foundation for the Use of Occupational Information in Guidance").

CSED would appreciate suggestions not only about the general format of the descriptions given here but also about the relevance of this information to students. The descriptions as they stand now contain most of the occupational information currently available.

* * *

Included here are examples of two job descriptions (for jobs with a great deal of information available). The underlined portions vary according to the information in the data base. Each such portion is numbered and explained in the generalized description and index which begins on page . These descriptions are tentative and need careful

development and programming. Based on available coded information, similar descriptions for all 850+ jobs in the data base are possible with this procedure.

A Guide to Wolff

The essential structure of the Wolff script is non interactive. It is designed to make use of available information about jobs. The codes given in the text are those used in the original data.

The computer is used to look up the codes and then translate the information into English. This is then placed in the appropriate spaces in the paragraph to create the description.

All the routines suggested were written except the "pluralizer." These are available for other uses. The script is a good guide to the type of information about jobs we have stored.

SAMPLE JOB DESCRIPTION I - DOCTOR

DOCTORS (2p) ARE PROFESSIONALS WHO WORK (2a) IN MEDICAL SERVICES, GOVERNMENT, AND COLLEGES AND UNIVERSITIES (6). THEIR WORK IS SCIENTIFIC AND TECHNICAL, AND INVOLVES THEM WITH PEOPLE (9). ON THE JOB THEY DIAGNOSE AND PRESCRIBE MEDICATION FOR DISEASES, TREAT INJURIES, AND DO SURGERY (7).

A DOCTOR (2) MUST COMPLETE PROFESSIONAL OR GRADUATE SCHOOL (17) BEFORE ENTERING HIS OCCUPATION. HE NEEDS 4 TO 10 YEARS OF (DOT 12) SPECIFIC TRAINING FOR HIS JOB AND THEN 6 MONTHS TO 1 YEAR (16) OF ON-THE-JOB TRAINING BEFORE BEING CONSIDERED A FULL-FLEDGED DOCTOR (2s). BEFORE BECOMING A DOCTOR (2s) HE GOES THROUGH A PERIOD OF FORMAL EDUCATION AND TRAINING; (15) THEREFORE, THERE ARE NO JOBS WHICH A PERSON NEEDS TO HOLD BEFORE BECOMING A DOCTOR (2s). (4) WITH MORE EDUCATION (28) HE CAN OFTEN EXPECT TO BECOME A SURGEON, A NEUROLOGIST, A HEAD PHYSICIAN, OR A PEDIATRICIAN. (5) A HIGH SCHOOL STUDENT INTERESTED IN BECOMING A DOCTOR (2s) SHOULD CONSIDER TAKING THE FOLLOWING COURSES: BIOLOGY, LATIN, CHEMISTRY, FOREIGN LANGUAGES, PHYSICS, AND SOCIAL STUDIES. (10)

A BEGINNING DOCTOR (2s) CAN EXPECT TO MAKE AT LEAST $6500 PER YEAR, (11a, 12a, 13a) AND MAY EVENTUALLY MAKE A MAXIMUM OF $70000 PER YEAR (11b, 12b, 13b). SINCE MANY DOCTORS (2p) ARE SELF-EMPLOYED, HE CAN SOMETIMES SET THE NUMBER OF HOURS HE WISHES TO WORK AND THEREFORE VARY HIS INCOME. (29, 26 25)

A DOCTOR (2s) SHOULD HAVE VERY GOOD GENERAL INTELLIGENCE, VERBAL ABILITY, AND ABILITY TO SEE THINGS IN SPACE OR PICTURES (DOT 10). HE SHOULD ALSO HAVE GOOD NUMERICAL ABILITY AND ABILITY TO WORK WITH HIS FINGERS (DOT 10). HIS JOB USUALLY REQUIRES HIM TO MAKE DECISIONS ON THE BASIS OF HIS OWN JUDGMENT, TO MAKE DECISIONS ON THE BASIS OF OBJECTIVE

INFORMATION, AND TO DEAL DIRECTLY WITH PEOPLE (DOT 13). A DOCTOR (2s) DOES NOT HAVE TO BE VERY STRONG, BUT (DOT 14a) AND HE IS EXPECTED TO TALK, LISTEN, LOOK AND USE HIS HANDS (DOT 14b) EFFECTIVELY.

KEEP IN MIND THE FOLLOWING IMPORTANT INFORMATION ABOUT DOCTORS (2p):

a. CURRENT INFORMATION INDICATES THAT IN THE FUTURE THERE WILL BE AN INCREASING (31) DEMAND FOR DOCTORS. (2p)

b. 70 TO 95% (19) OF ALL DOCTORS (2p) ARE MEN (19).

c. DOCTORS (2p) SOMETIMES (24) TRAVEL OVERNIGHT OR LONG DISTANCES.

d. DOCTORS (2p) OFTEN WORK NIGHTS AND WEEKENDS. (22, 23)

e. DOCTORS (2p) SOMETIMES (DOT 15a) WORK OUTDOORS.

f. DOCTORS (2p) ARE LICENSED BY THE STATE. (20)

SAMPLE JOB DESCRIPTION II - FOURDRINIER-MACHINE TENDER

FOURDRINIER-MACHINE TENDERS (2p) ARE PROCESSING WORKERS (2a) IN THE PAPER PRODUCTS INDUSTRY (6). THEIR WORK REQUIRES THEM TO DEAL WITH THINGS AND OBJECTS RATHER THAN WITH PEOPLE OR IDEAS (9). ON THE JOB THEY OPERATE THE WET END OF PAPER MAKING MACHINES. THEY CHECK PAPER QUALITY AND SUPERVISE RELATED MACHINE OPERATORS (7).

A FOURDRINIER-MACHINE TENDER (2s) MUST COMPLETE JUNIOR HIGH SCHOOL (17) AND SHOULD ALSO GRADUATE FROM A VOCATIONAL HIGH SCHOOL (18) BEFORE ENTERING HIS OCCUPATION. HE NEEDS 6 MONTHS TO 1 YEAR OF (DOT 12) SPECIFIC TRAINING FOR HIS JOB. BEFORE BECOMING A FOURDRINIER-MACHINE TENDER (2s), HE USUALLY HOLDS ANOTHER JOB; (15) SOME OF THE JOBS WHICH HE CAN HOLD BEFORE BEING PROMOTED ARE INSULATION-BOARD BACKTENDER, FILTRATION HELPER, AND PACKAGING LABORER. (4) WITH ON THE JOB TRAINING OR TIME ON THE JOB (28) HE CAN OFTEN EXPECT TO BECOME A PAPER MACHINE FOREMAN, WET ROOM FOREMAN, OR PRODUCTION FOREMAN (5). A HIGH SCHOOL STUDENT INTERESTED IN BECOMING A FOURDRINIER-MACHINE TENDER (2s) SHOULD CONSIDER TAKING THE FOLLOWING COURSES: CHEMISTRY, MATHEMATICS, PHYSICS, GENERAL SCIENCE, AND SHOP (10).

A BEGINNING FOURDRINIER-MACHINE TENDER (2s) CAN EXPECT TO MAKE AT LEAST $2.64 PER HOUR (11a, 12a, 13a) AND MAY EVENTUALLY MAKE A MAXIMUM OF $5.70 PER HOUR (11b, 12b, 13b). IN ADDITION HE MAY RECEIVE HEALTH AND LIFE INSURANCE AND PAID VACATIONS, AND A SHARE IN THE COMPANY'S PROFITS (27).

A FOURDRINIER-MACHINE TENDER (2s) SHOULD HAVE AVERAGE GENERAL INTELLIGENCE, ABILITY TO SEE THINGS IN SPACE, OR PICTURES, AND ABILITY TO MOVE HIS EYES AND HANDS AND FINGERS TOGETHER (DOT 10). HIS JOB USUALLY REQUIRES HIM TO MAKE DECISIONS ON THE BASIS OF OBJECTIVE INFORMATION AND TO DO PRECISE WORK ACCORDING TO INSTRUCTIONS (DOT 13). A FOURDRINIER-MACHINE TENDER (2s) SHOULD BE FAIRLY STRONG, AND (DOT 14a) HE IS EXPECTED

TO USE HIS HANDS (DOT 14b) EFFECTIVELY.

KEEP IN MIND THE FOLLOWING IMPORTANT INFORMATION ABOUT FOURDRINIER-MACHINE TENDERS (2p):

a. CURRENT INFORMATION INDICATES THAT IN THE FUTURE THERE WILL BE NO CHANGE IN THE (31) DEMAND FOR FOURDRINIER-MACHINE TENDERS (2p).

b. 70 TO 95% (19) OF ALL FOURDRINIER-MACHINE TENDERS (2p) ARE MEN (19).

c. FOURDRINIER-MACHINE TENDERS (2p) OFTEN WORK NIGHTS AND WEEK-ENDS (22,23).

d. FOURDRINIER-MACHINE TENDERS (2p) USUALLY BELONG TO UNIONS (21).

e. FOURDRINIER-MACHINE TENDERS (2p) ARE SUBJECT TO WET AND HUMID CONDITIONS (DOT 15b) WHILE ON THEIR JOB.

INDEX TO GENERALIZED JOB DESCRIPTIONS

If this system is put into actual operation, it will require considerable programming effort between NEEDS and CSED. The following routines would probably have to be developed:

a. a routine for a "series" of answers, which places commas correctly and precedes the last part of the series with "and."
b. a routine to pluralize job titles.
c. a routine to precede singular job titles by "a" or "an."
d. a routine for female inquirers which uses the female personal pronouns.
e. a routine to blank out an entire sentence or a part of it when an item is coded "no information."
f. a routine to invert job titles (e.g., change "welder, arc" in the data base to "arc welder")

In this index each sentence of the description (in capital letters) is followed by an explanation of its coding according to the "User's Manual for Occupational Descriptions" and the "Description of the Tape of the Dictionary of Occupational Titles." The numbers used refer directly to items in these two documents, and they should be referred to for details. The following is a listing of items and numbers from the "User's Manual for Occupational Descriptions."

1. Identification number
2. Job title
   - 2s. Job title in singular
   - 2p. Job title in plural
   - 2a. DOT number of job title

3. Alternate titles
4. Lower jobs
5. Higher jobs
6. Industries
7. Job description
8. Worker trait sector
9. Interests
10. High school courses
11. Hourly wage
    - 11a. Lowest
    - 11b. Highest
12. Weekly wage
    - 12a. Lowest
    - 12b. Highest
13. Yearly wage
    - 13a. Lowest
    - 13b. Highest
14. Occupational rating scales
15. Previous activity
16. On-the-job training
17. Education required
18. Education preferred
19. Sex
20. Licensing requirements
21. Union membership
22. Weekend work
23. Night work

24. Travel
25. Seasonal fluctuation
26. Basis of income
27. Incentives
28. Promotion paths
29. Self-employment
30. Future growth
31. Future demand for new workers

The following items are from the "Description of the Tape of the Dictionary of Occupational Titles":

DOT 1. Identification number
DOT 2. Job title
DOT 3. Industry designation
DOT 4. Alternate job title number
DOT 5. Worker functions
DOT 6. Work fields
DOT 7. DOT number from third edition
DOT 8. DOT number from second edition
DOT 9. Worker trait sector
DOT 10. Aptitudes
DOT 11. General educational development
DOT 12. Specific vocational preparation
DOT 13. Temperaments

DOT 14. Physical demands

14a. Strength (1st column)

14b. Other physical demands (last 5 columns)

DOT 15. Working conditions

15a. Indoor or outdoor work (1st column)

15b. Other working conditions (last 6 columns)

DOT 16. Materials, products, subject matter, and services

DOT 17. "Tie Code"

_____ (2p) ARE _____ (2a) IN _____ (6)

2p. Job Title. Requires a routine for pluralization and for inversion. Also, in some cases the Job Title is too long or complicated for efficient presentation and will have to be replaced by a simpler title.

2a. DOT number of Job Title. The first two digits of the 6-digit DOT number of the Job Title should be interpreted as follows:

00-15, 19 = PROFESSIONALS WHO WORK

(if 4th digit is 2 to 8 and 5th digit is 3 to 8) = SEMI-PROFESSIONAL OR TECHNICAL WORKERS

16 = ADMINISTRATORS WHO WORK

18 = MANAGERS WHO WORK

20-24 = CLERICAL WORKERS

25-29 = WORKERS

30-38 = SERVICE WORKERS

40-46 = AGRICULTURAL WORKERS

50-59 = PROCESSING WORKERS

60-69 = MACHINE WORKERS

70-79 = BENCH WORKERS

80-89 = STRUCTURAL WORKERS

90-97 = WORKERS

6. Industries. One to 4 industries may be coded. The 1 digit or 2 digit SIC code should be used most of the time, since the 3 digit code is usually too detailed. Since the data base contains mostly 3 digit titles and codes, a list of 2 digit titles and numbers must be prepared. The following is the beginning of such a list:

9bb = GOVERNMENT (b = blank)

11 = THE COAL MINING INDUSTRY

26 = THE PAPER PRODUCTS INDUSTRY

35 = THE ELECTRICAL MACHINERY INDUSTRY

82 = EDUCATION

821 = ELEMENTARY AND SECONDARY SCHOOLS

822 = COLLEGES AND UNIVERSITIES

THEIR WORK _____ (9)

9. Interests. One to 3 Interests may be coded.

1 = REQUIRES THEM TO DEAL WITH THINGS AND OBJECTS RATHER THAN WITH PEOPLE OR IDEAS

2 = INVOLVES THEM IN BUSINESS

3 = IS CONCRETE AND ORGANIZED

4 = INVOLVES THEM WITH PEOPLE

= omit if 6 is present

5 = omit

6 = REQUIRES THEM TO DEAL WITH PEOPLE AND IDEAS RATHER THAN WITH THINGS AND OBJECTS

7 = IS SCIENTIFIC AND TECHNICAL

8 = IS ABSTRACT AND CREATIVE

9 = INVOLVES THEM WITH MACHINES AND TECHNIQUES

= omit if 1 is present

0 = omit

ON THE JOB THEY _____ (7)

7. Job Description. The job title which begins the description should be deleted.

A _____ (2s) MUST _____(17) AND SHOULD ALSO _____ (18) BEFORE ENTERING HIS OCCUPATION.

17. Education Required.

If blank, omit sentence.

1 = COMPLETE JUNIOR HIGH SCHOOL

2 = GRADUATE FROM AN ACADEMIC HIGH SCHOOL

(If Education Preferred (18) is 3) = MUST GRADUATE FROM EITHER AN ACADEMIC OR A VOCATIONAL HIGH SCHOOL

3 = GRADUATE FROM A VOCATIONAL HIGH SCHOOL

(If Education Preferred (18) is 2) = MUST GRADUATE FROM EITHER AN ACADEMIC OR A VOCATIONAL HIGH SCHOOL

4 = ATTEND A BUSINESS SCHOOL

5 = ATTEND A TECHNICAL SCHOOL

6 = ATTEND A JUNIOR COLLEGE

7 = GRADUATE FROM COLLEGE

8 = COMPLETE GRADUATE OR PROFESSIONAL SCHOOL

9 = blank

18. Education Preferred.

If blank, omit "AND SHOULD ALSO"

If Education Preferred is same as Education Required = blank

If Education Preferred is 3 and Education Required is 2 = blank

If Education Preferred is 2 and Education Required is 3 = blank

1 = COMPLETE JUNIOR HIGH SCHOOL

2 = GRADUATE FROM AN ACADEMIC HIGH SCHOOL

3 = GRADUATE FROM A VOCATIONAL HIGH SCHOOL

4 = ATTEND A BUSINESS SCHOOL

5 = ATTEND A TECHNICAL SCHOOL

6 = ATTEND A JUNIOR COLLEGE

7 = GRADUATE FROM COLLEGE

8 = COMPLETE GRADUATE OR PROFESSIONAL SCHOOL

9 = blank

HE NEEDS _____ (DOT 12) SPECIFIC TRAINING FOR HIS JOB AND THEN _____ (16) OF ON-THE-JOB TRAINING BEFORE BEING CONSIDERED A FULL-FLEDGED _____(2s).

DOT 12. Specific Vocational Preparation.

1 = NO

2 = UP TO 30 DAYS OF

3 = 30 DAYS TO 3 MONTHS OF

4 = 3 TO 6 MONTHS OF

5 = 6 MONTHS TO 1 YEAR OF

6 = 1 TO 2 YEARS OF

7 = 2 TO 4 YEARS OF

8 = 4 TO 10 YEARS OF

9 = OVER 10 YEARS OF

16. On-the-Job Training.

If blank, omit "AND THEN _____ (16) OF ON-THE-JOB TRAINING"

1 = blank

2 = UP TO 30 DAYS

3 = 1 TO 3 MONTHS

4 = 3 TO 6 MONTHS

5 = 6 MONTHS TO 1 YEAR

6 = 1 TO 2 YEARS

7 = 2 TO 4 YEARS

8 = OVER 4 YEARS

9 = blank

BEFORE BECOMING A _____(2s) HE _____ (15); SOME OF THE JOBS WHICH HE CAN HOLD BEFORE BEING PROMOTED ARE _____ (4)

15. Previous Activity. Use only the first number coded.

If blank, omit "BEFORE BECOMING A _____ (2s), HE _____ (15);

1 = GOES THROUGH A PERIOD OF FORMAL EDUCATION AND TRAINING

2 = USUALLY HOLDS ANOTHER JOB

3 = USUALLY BEGINS AS AN APPRENTICE

8 = NEEDS NO FORMAL EDUCATION OR JOB EXPERIENCE

9 = blank

4. Lower Jobs. Zero to 4 jobs may be coded.

If Previous Activity is 1 or 8 and Lower Jobs is blank, replace part of sentence beginning with "SOME OF THE . . ." with "THEREFORE THERE ARE NO JOBS WHICH A PERSON CAN HOLD BEFORE BECOMING A _____ (2s)". Otherwise, if blank, omit "SOME OF THE . . ." and change semi-colon to period.

8, 9 = blank

WITH _____ (28) HE CAN OFTEN EXPECT TO BECOME _____ (5)

28. Promotion Paths. Zero, 1, or 2 may be coded. Connect with "OR" if two are coded.

If blank, omit "WITH."

1 = blank

2 = ON-THE-JOB TRAINING

3 = SPECIAL TRAINING

4 = MORE EDUCATION

5 = TIME ON THE JOB

8, 9 = blank

5. Higher Jobs. Zero to 4 jobs may be coded. Place "A" or "AN" before each job title.

If blank, omit sentence.

8, 9 = blank

A HIGH SCHOOL STUDENT INTERESTED IN BECOMING A _____ (2s) SHOULD CONSIDER TAKING THE FOLLOWING COURSES: _____ (10)

10. High School Courses. Write "course" if "1" is coded. Up to 36 courses may be coded.

If blank, omit sentence.

9 (in column 1) = blank

A BEGINNING _____ (2s) SHOULD EXPECT TO MAKE AT LEAST _____ (11a, 12a, 13a) AND MAY EVENTUALLY MAKE A MAXIMUM OF _____ (11b, 12b, 13b).

11a, 12a, 13a. Hourly Wage, Weekly Wage, Yearly Wage -- Lowest. If more than one Lowest Wage is coded, the figures for the longest period of time should be used.

If no Lowest Wage is coded, omit "BEGINNING . . . SHOULD EXPECT TO MAKE AT LEAST _____ AND

13a. $_____ PER YEAR (Yearly Wage)

12a. $_____ PER WEEK (Weekly Wage)

11a. $_____ PER HOUR (Hourly Wage)

11b, 12b, 13b. Hourly Wage, Weekly Wage, Yearly Wage -- Highest. If more than one Highest Wage is coded, use the figures for the longest period of time.

If 11a, 12a, 13a, 11b, 12b, 13b are blank, omit sentence.

If only 11b, 12b, 13b are blank, omit "AND MAY EVENTUALLY MAKE A MAXIMUM OF _____."

If 11b, 12b, 13b do not have figures for the same period of time as 11a, 12a, 13a = blank

13b. $_____ PER YEAR (Yearly Wage)

12b. $_____ PER WEEK (Weekly Wage)

11b. $_____ PER HOUR (Hourly Wage)

IN ADDITION HE MAY RECEIVE _____ (27)

27. Incentives. Zero to 4 Incentives may be coded.

If 11a, 12a, 13a, 11b, 12b, 13b are blank, omit "IN ADDITION."

If blank, omit sentence.

50 = HEALTH AND LIFE INSURANCE AND PAID VACATIONS

01 = FREE HOUSING

02 = FREE MEALS

03 = FREE UNIFORMS

04 = TIPS

05 = BONUSES

06 = OVERTIME PAY

07 = HEALTH INSURANCE

08 = LIFE INSURANCE

09 = A SHARE IN THE COMPANY'S PROFITS

10 = FREE ADVANCED TRAINING

11 = FREE FURTHER EDUCATION

12 = PAID VACATIONS AND HOLIDAYS

13 = PENSIONS AT RETIREMENT

14 = STOCK OPTIONS

15 = DISCOUNTS

16 = EXPENSE ACCOUNTS

17 = TRAVELING EXPENSES

97, 98, 99 = blank

SINCE MANY _____ (2p) ARE SELF-EMPLOYED, HE CAN SOMETIMES SET THE NUMBER OF HOURS HE WISHES TO WORK AND THEREFORE VARY HIS INCOME (29).

29. Self-employment

1 = (use sentence)

2, 9 = (omit sentence)

SINCE _____ (2p) ARE OFTEN PAID BY COMMISSION, HE CAN VARY HIS INCOME GREATLY OVER A SHORT PERIOD OF TIME (26).

26. Basis of Income.

2, 4 = (use sentence)

= (omit sentence if Self-employment = 1)

3 = (use sentence, but omit "often")

= (omit sentence if Self-employment = 1)

1, 5, 9 = (omit sentence)

HIS INCOME ALSO VARIES WITH THE PARTICULAR SEASON OF THE YEAR (25).

25. Seasonal Fluctuation.

1 = (use sentence; omit "ALSO" if Self-employment or Basis of Income do not require sentences)

2, 9 = (omit sentence)

A _____ (2s) SHOULD HAVE _____ (DOT 10).

DOT 10. Aptitudes. Print only those Aptitudes coded 1, 2, or 3. If more than 6 are coded 1, 2, and 3, print only those coded 1 and 2. All Aptitudes with the same number should be combined in the same series preceded by "VERY GOOD," "GOOD," or "AVERAGE."

If more than three Aptitudes are printed, two sentences should be generated, the second being, "HE SHOULD ALSO HAVE _____ (DOT 10). In this case all Aptitudes coded 1 should be in the first sentence; Aptitudes coded 2 should be in the first or second sentence (a procedure can be developed to assign them to the sentence which has the least Aptitudes); and Aptitudes coded 3 should be in the second sentence.

1 = VERY GOOD

2 = GOOD

3 = AVERAGE

4 = omit

Aptitudes coded:

a = GENERAL INTELLIGENCE

b = VERBAL ABILITY

c = NUMERICAL ABILITY

d = ABILITY TO SEE THINGS IN SPACE IN PICTURES

= omit if e is lower than d

e = ABILITY TO SEE THINGS IN PICTURES OR SPACE

= omit if d is lower than e

f = CLERICAL ABILITY

g = ABILITY TO MOVE HIS EYES AND HANDS AND FINGERS TOGETHER

h = ABILITY TO WORK WITH HIS FINGERS

= omit if g is printed

i = ABILITY TO WORK WITH HIS HANDS

= omit if g is printed

j = omit

k = ABILITY TO SEE DIFFERENT COLORS

HIS JOB USUALLY REQUIRES HIM TO _____ (DOT 13).

DOT 13. Temperaments. One to 5 may be coded.

1 = DO MANY THINGS IN A SHORT PERIOD OF TIME

2 = DO ROUTINE WORK

3 = FOLLOW INSTRUCTIONS CAREFULLY

4 = PLAN WHAT OTHER PEOPLE SHOULD DO

5 = DEAL DIRECTLY WITH PEOPLE

6 = WORK ALONE

7 = INFLUENCE PEOPLE

8 = WORK UNDER PRESSURE

9 = MAKE DECISIONS ON THE BASIS OF HIS OWN JUDGMENT

10 = MAKE DECISIONS ON THE BASIS OF OBJECTIVE INFORMATION

X = INTERPRET THINGS PERSONALLY

Y = DO PRECISE WORK ACCORDING TO INSTRUCTIONS

A _____ (2s) _____ (DOT 14a) HE IS EXPECTED TO _____ (DOT 14b) EFFECTIVELY.

14a. Physical Demands (Strength). From the 1st column of Physical Demands.

S, L = DOES NOT HAVE TO BE VERY STRONG, BUT

M = SHOULD BE FAIRLY STRONG, AND

H, V = SHOULD BE VERY STRONG, AND

14b. Physical Demands. From the last 5 columns of Physical Demands. One to 5 may be coded. Print in the following order:

5 = TALK, LISTEN

= (If no other Physical Demands are coded) = TALK AND LISTEN

6 = LOOK

4 = USE HIS HANDS

3 = USE HIS BODY

2 = CLIMB AND BALANCE HIMSELF

KEEP IN MIND THE FOLLOWING IMPORTANT INFORMATION ABOUT _____ (2p):

(Following this statement each sentence printed should be lettered sequentially from a to g)

CURRENT INFORMATION INDICATES THAT IN THE FUTURE THERE WILL BE

_____ (31) DEMAND FOR _____ (2p).

31. Demand for New Workers.

If blank, omit sentence.

1 = A DECLINING

2 = NO CHANGE IN THE

3 = AN INCREASING

4 = A CONTINUOUS HIGH

9 = blank

_____ (19) OF ALL _____ (2p) ARE _____ (19).

19. Sex

If blank, omit sentence.

1 = 95-100% . . . MEN

2 = 70-95% . . . MEN

3 = 30=70% . . . MEN

4 = 70-95% . . . WOMEN

5 = 95-100% . . . WOMEN

9 = blank

_____ (2p) _____ (24) TRAVEL OVERNIGHT OR LONG DISTANCES.

24. Travel.

If blank, omit sentence.

1 = OFTEN

2 = SOMETIMES

3, 9 = blank

_____ (2p) _____ (22, 23).

22, 23. Weekend Work and Night Work. Combine the two items, with the first number Weekend Work, the second Night Work.

If blank, omit sentence.

11 = blank

12,92 = SOMETIMES WORK NIGHTS

13,93 = OFTEN WORK NIGHTS

12,29 = SOMETIMES WORK WEEKENDS

22 = SOMETIMES WORK NIGHTS AND WEEKENDS

23 = SOMETIMES WORK WEEKENDS AND OFTEN WORK NIGHTS

31,39 = OFTEN WORK WEEKENDS

32 = OFTEN WORK WEEKENDS AND SOMETIMES WORK NIGHTS

33 = OFTEN WORK NIGHTS AND WEEKENDS

99 = blank

_____ (2p) _____ (DOT 15a) WORK OUTDOORS.

DOT 15a. Working Conditions - (Indoor or Outdoors). Use the 1st column of Working Conditions.

If blank, omit sentence.

I = blank

B = SOMETIMES

O = USUALLY

_____ (2p) _____ (20).

20. License.

If blank, omit sentence.

1 = ARE LICENSED BY THE STATE

2 = ARE SOMETIMES REQUIRED TO GET A LICENSE

3, 9 = blank

_____ (2p) _____ (21).

21. Union Membership.

If blank, omit sentence.

1 = USUALLY BELONG TO UNIONS

2, 9 = blank

_____ (2p) ARE SUBJECT TO _____ (DOT 15b) WHILE ON THEIR JOB.

DOT 15b. Working Conditions. Use the last 6 columns only. Zero to 6 may be coded.

If blank, omit sentence.

2 = VERY COLD TEMPERATURES

3 = VERY WARM TEMPERATURES

4 = WET AND HUMID CONDITIONS

5 = NOISE AND VIBRATIONS

6 = HAZARDS

7 = UNHEALTHY AIR